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FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

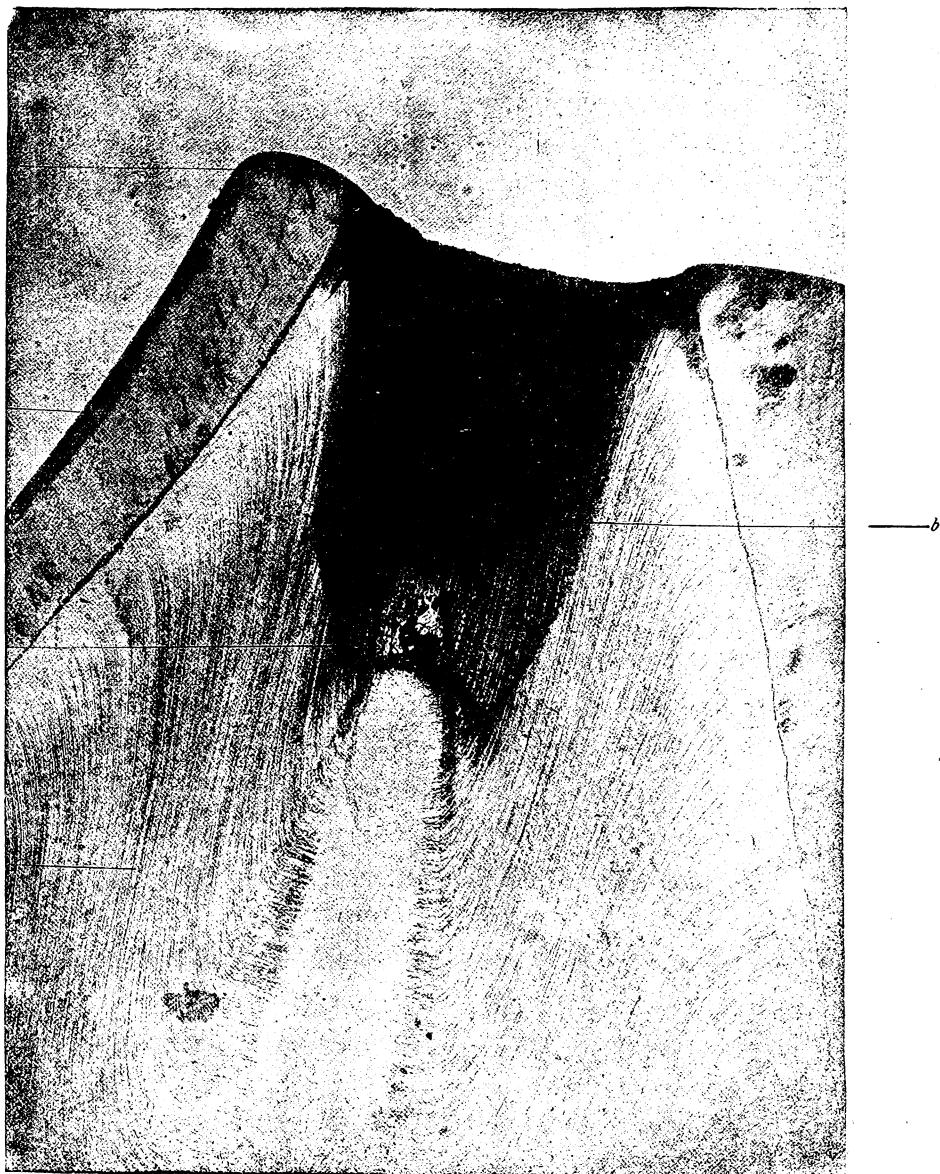


FIG. 5.
Sections of Tooth Treated with Nitrate of Silver to Prevent Caries.

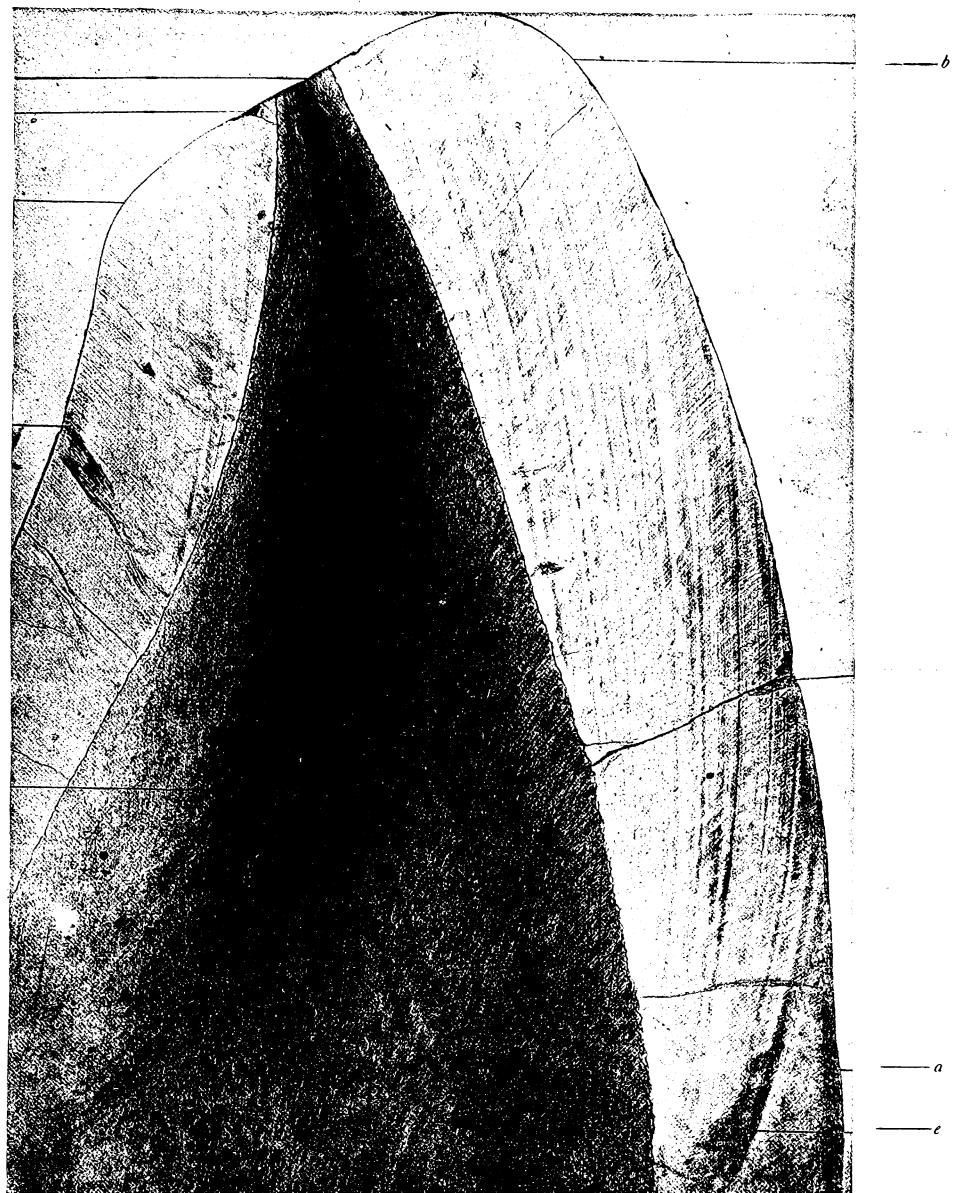


FIG. 6.
Section of Tooth Stained with Rubin S.



FIG. 7.

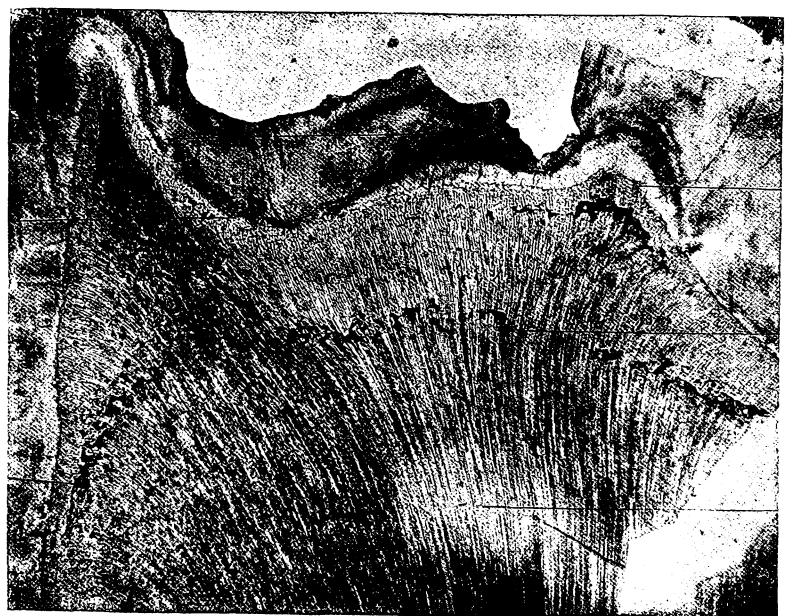
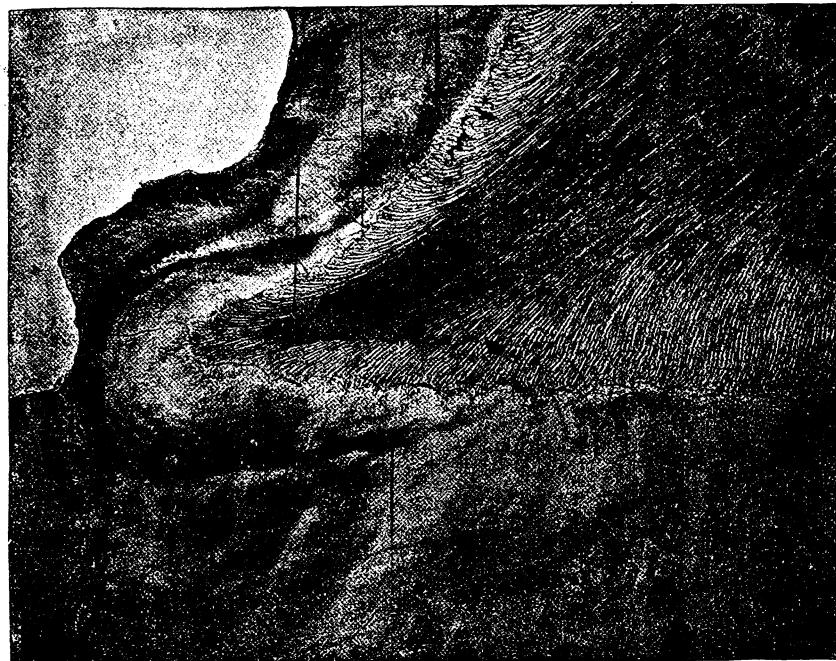


FIG. 8.
(Section by Black.)

FIG. 10
(Section by Black.)



FIG. 10
(Section by Black.)



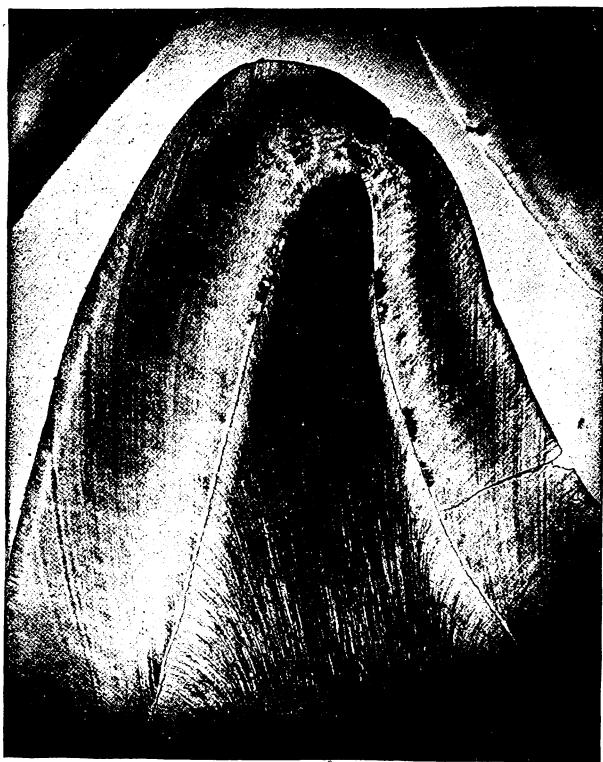


FIG. 11.
(Section by Black.)

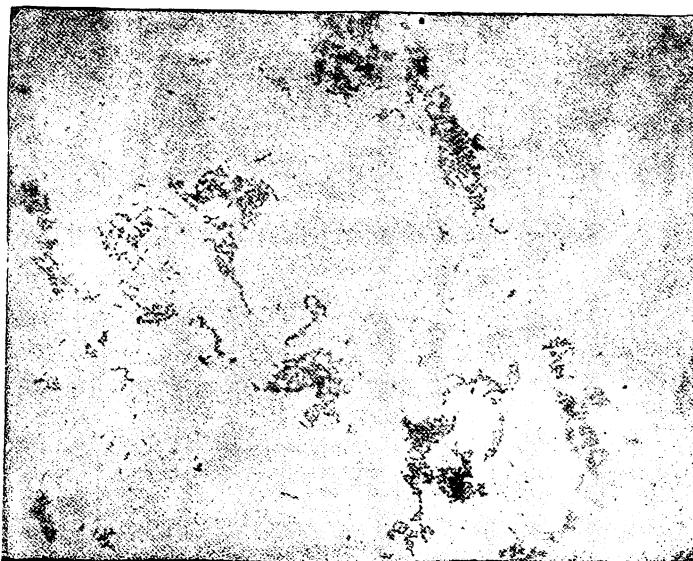
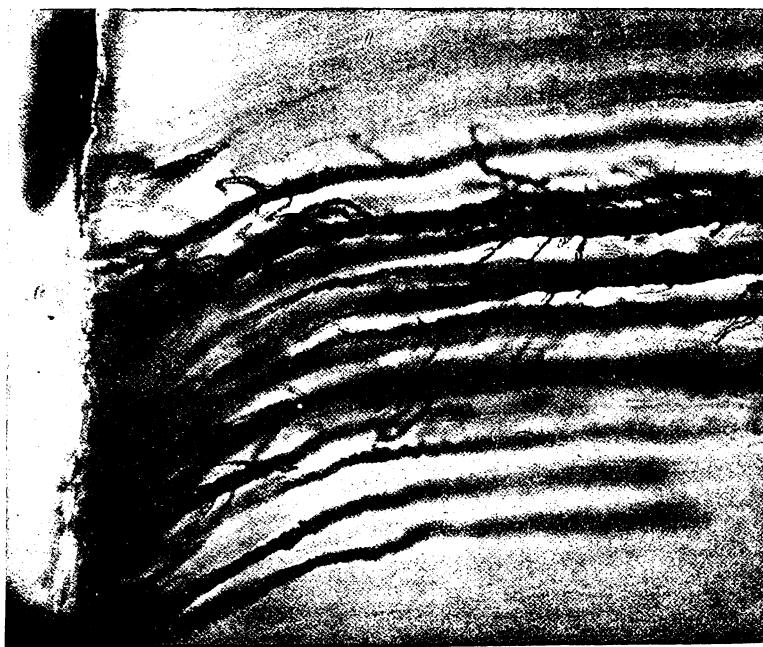
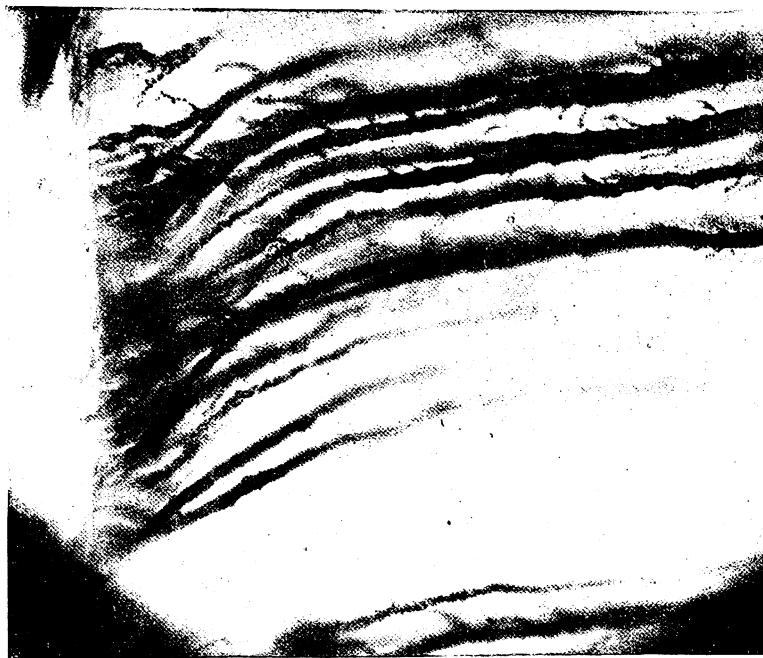


FIG. 12.
Bacteria by Black.



FIGS. 13 and 14. Artificial Decay. Black.

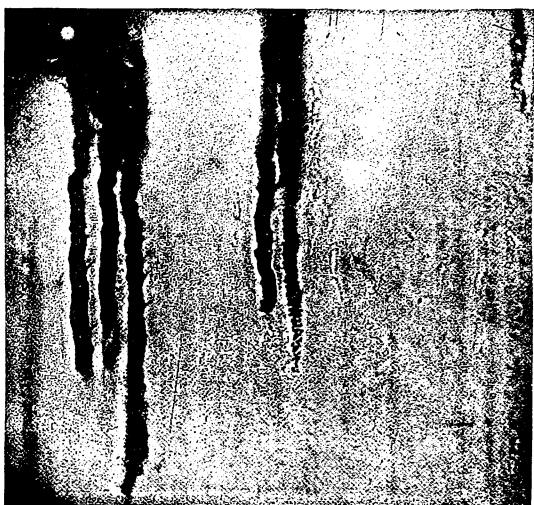


FIG. 15.
Artificial Decay. Miller.

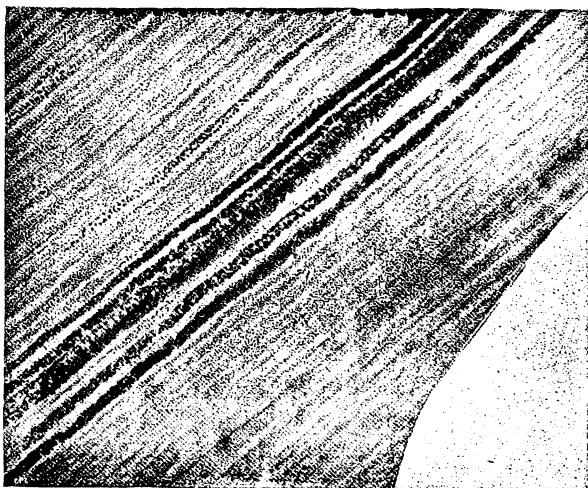


FIG. 16.
Natural Decay. Miller.



FIG. 17.
Natural Decay. One section.



FIG. 18.
Tobacco Stain.

Explanation of Illustrations.

FIG. 1. *a*—Incisive edge showing slight effect of action of acids.
b—Perfectly formed enamel unaffected by bacteria or acids.
c—Enamel affected by bacterial ferment.
d—Cavity on approximal surface. Dentine not affected although cavity reaches it.
e and *f*—Bacteria penetrating dentine in nearly straight lines.

FIG. 2. Same as Fig. 1 under higher power.

a—Bacterial plaques.
b—Penetration of bacteria shown by methyl blue.
c—Penetration of acid shown by eosin.
d—Enamel showing little effects of acids.

FIG. 3. Same as Fig. 2.

a—Bacterial plaques.
b—Penetration of bacteria staining deep blue.
c—Penetration of acid.
d—Enamel unstained because little affected.

This section shows beautifully the differentiation by staining. Where the lime-salts have been partially removed, exposing the organic matrix of the enamel, it stains with eosin. Where the bacteria have penetrated the enamel, it stains blue. Where the enamel is unaffected, there is no stain.

FIG. 4. *a*—Action of acid on enamel.
b—The greater resistance of dentine.
c—Plaques of bacteria.
d—Enamel but slightly affected by acid.

FIG. 5. Section of tooth treated with nitrate of silver for prevention of decay. Treatment stopped decay in other parts of the mouth. This tooth was badly discolored and badly decayed, and therefore was cut off and the root crowned. Illustration shows depth of penetration of nitrate of silver.

a—Enamel but slightly discolored.
b—Penetration of the nitrate of silver into the dentine.
c—Cavity of decay on approximal surface.
d—Dentine showing no effect of bacterial action. Organic matter in the tubuli takes the stain.

FIG. 6. Tooth stained with Rubin S.

- a*—Bacteria.
- b*—Perfect enamel.
- c*—Enamel affected by bacteria.
- d*—Dentine which being highly organic, is deeply stained.
- e*—Scratches in enamel caused by grinding, discolored by stain.
- f*—Dentine exposed by abrasion.

FIG. 7. Part of Fig. 6 under higher power.

- c*—Imperfect calcification of the enamel and evidence of action of acids.
- d*—Cellular structure of enamel differentiated by stain.
- e*—Organic matter not fully calcified, as proven by the differential staining.

FIG. 8. Photograph of a section by Black.

- a*—Enamel disintegrated by bacterial action.
- b*—Relatively greater resistance of dentine over enamel.
- c*—Interglobular spaces filled with organic matter.
- d*—Dentinal tubuli.

FIG. 9. Same as Fig. 8 under higher power.

FIG. 10. Photograph of section by Black.

- a*—Penetration of acid into enamel.
- b*—Greater resistance of the dentine.
- c*—Interglobular spaces.
- d*—Dentinal tubuli.

FIG. 11. Photograph of section by Black.

Enamel showing action of acid and imperfect formation, etc.

FIG. 12. Pure culture used by Black in producing artificial decay shown in Figs. 13 and 14.

FIGS. 13 and 14. Artificial decay by Black.

Bacteria penetrating dentine in form of wedges and described by Miller.

FIG. 15. Artificial decay.—Miller.

FIG. 16. Natural decay.—Miller.

Bacteria penetrating tubuli in the form of wedges.

FIG. 17. Cross section showing bacteria of decay in dentinal tubuli.

FIG. 18. Section of a tooth lost by pyorrhea. Stained with tobacco, which rendered it immune to decay.



EXCLUSIVE CONTRIBUTIONS

Prevention of Decay of the Teeth.*

By A. C. HART, Ph.B., D.D.S., M.D., San Francisco, Cal.

There is certainly a demand for a more systematic method of treatment for the prevention of decay of the teeth than is commonly practiced by the profession. Acting on the conclusions of Drs. Black and Williams, many of the profession are depending chiefly on instrumentation together with the antiseptic mouth washes and tooth powders suggested by Dr. W. D. Miller, of Berlin.

No method has been generally accepted, looking to the prevention of decay in sound teeth, or its arrest in decaying teeth, other than the use of nitrate of silver. Even this admirable method has not found favor, many even doubting that nitrate of silver will stop decay.

There are, however, a few dentists scattered over the country who are using methods that sterilize the teeth in the mouth, and prevent their being acted upon by the ferments, due to the presence and growth of acid forming bacteria.

The results obtained from such treatment have exceeded our most sanguine expectation. Success has crowned our efforts where the methods, as practiced by the profession today, failed.

I am delighted to present this treatment before you, but before doing so will ask your indulgence in a review of some of the work of Drs. Black and Williams. This is but right, that you may judge impartially of their conclusions, and see whether they were justified in offering them to the profession as basic principles. If they are right, then Drs. Miller, Andrews and others are wrong. No one, as yet, has dared to dispute their evidence. Drs. Andrews and Truman have been denounced by Dr. Williams for even daring to doubt but that absolute knowledge has been discovered.

Instrumentation, as offered by Dr. Black, in the *Dental Review*, for February, 1897, while it undoubtedly removes a large portion of the tooth substance liable to decay, and therefore lessens very materially subse-

*Prepared expressly for this magazine, but read before the Central Dental Association, of Northern New Jersey, Dec. 1898, in order to obtain discussions.—ED.

ITEMS OF INTEREST

quent attacks, is nevertheless a questionable method. It does little better for the patient in appearance than the charlatan who crowns with gold. This removal of the structure of the tooth, to be replaced by foreign material, I take to be unwarranted and not justifiable. It is not artistic, to say the least. The strain on both patient and operator, in the restoration of contour, lost by instrumentation, I believe to be detrimental, and that the future usefulness of the tooth is not greatly enhanced by such measures. I believe the aim should be to conserve all the tooth structure possible while obtaining mechanical fixation of our fillings, and that we should look to some other method than that of instrumentation for the arrest and prevention of decay.

The repeated attempt by instrumentation to thoroughly remove all of the bacteria, and tooth structure weakened by the disintegrative action of ferments, is practically an impossibility, as has been repeatedly shown in the photo-micrographs of Drs. Williams, Andrews, Broomell, Noyes and other histologists. Yet Dr. Black told me himself, when I was in Chicago last month, that he most thoroughly disapproves of placing any antiseptic or other agent in a cavity with the object of sterilization; upon instrumentation alone, would he rely. However I must report that after a two hours' explanation of my views, he said, "I have no objection to sterilizing the surface enamel of the teeth."

Surely if it be important to sterilize the surface enamel, how much more so the deeper portions, including the dentine, into the tubules of which are being drawn by capillary action and chemism, these disintegrating ferments.

The idea of sterilizing the teeth themselves occurred to me through clinical experience. After making what I then considered careful examinations of teeth without finding any caries, the patient still insisting that there must be some decay, the teeth being sensitive, I would apply the rubber dam, and after carefully drying the teeth, small cavities could be detected that otherwise would be unnoticed, and white spots, so characteristic of the first stages of decay, would appear.

These cavities were sterilized, filled in a manner conserving the most tooth structure possible, and treated so as to prevent the recurrence of decay, as I shall describe later. I will call attention to several photographs which indicate how nearly impossible it is to remove bacteria and the results of their fermentative action.

Fig. 1 is a section through a bicuspid taken from the mouth of a patient suffering from what is sometimes called "white decay." But she had become discouraged from the repeated failure of fillings, and these, too, made by one of our best dentists, so she went to one of the "Dental Parlors" and had all of her teeth extracted.

I may say that I should probably never have become so deeply interested in this work, had it not been for the practical help given me by men in these "Dental Parlors." They have saved teeth for me, together with their histories and other data of vast importance to one working along these lines. Would that the ethical dentists might help me. Nearly sound teeth are often extracted, which for histological purposes would be exceedingly valuable. The teeth should be placed in a solution containing ten per cent. of formalin and fifty per cent. alcohol as soon as extracted, and notes kept of the history, age of the patient, condition of the mouth as to decay—whether rapid, medium or slow—together with any family history bearing on the case, including the general health of the patient. For such specimens I shall be greatly obliged.

This bicuspid, Fig. 1, from a casual examination while wet, appeared quite perfect. A section was cut, from which this photo-micrograph was made, to discover if possible why teeth should have "white decay."

While the section was in the hardening solutions, the two pieces remaining were dehydrated. The section, it will be seen, had been cut through a tiny cavity. The dried fragments showed the tooth to be literally covered with white spots. The section, by subsequent staining showed the tooth to be badly disintegrated. How could instrumentation save this tooth, or any of those shown in Figs. 1, 2, 3, 8, 9, 10, 11? These photographs explain to me in part why teeth decay so rapidly, and how utterly impossible it is for patients to save their teeth by the system of prophylaxis as now used. Such conditions demand immediate attention, or else the teeth will be lost. You ask, "Have you any treatment that will meet such conditions as these; that will save the teeth and prevent the progress of bacterial ferments?" I believe I have. For the past three years I have been uniformly successful.

Dr. Williams says the white spots appearing on teeth (see *Cosmos*, March, 1897, page 188), evince "a deficiency of that albumen-like product of the enamel organ, which constitutes, when calcified, the cement substance of enamel."

From this I understand him to believe that his photo-micrographs show imperfect calcification and not the action of acids. Dr. Black seems to have imbibed the same idea from Dr. Williams's work, for he says (*Dental Review*, February, 1897), in speaking of Dr. Williams's work: "The most persistent imperfection in enamel is what Dr. Williams regards as a partial failure of the cement substance which unites the rods together. He believes that it was in the quality of the material, or, in some instances, apparently an insufficient amount of it, so that the union of the rods remains in some degree imperfect. The latter, he says, produce the white spots often seen in enamel." (See Figs. 1, 2, 8, 9, 11, 14, *Cosmos*, April, 1897.)

To my mind these photographs show evidences of the action of an acid; as much so at all events as do Figs. 75, 76, *Cosmos*, May, 1897, and Figs. 10, 11, 17, 20, 21, 29, 31, *Cosmos*, July, 1898, and my illustrations, Figs. 1, 2, 3, 4, 5, 6, 7.

No one would contend that there is much organic cement substance, other than the water of crystallization, in marble, yet its polished surface will be distinctly etched if we allow a bean to grow upon it. The ivy clinging to our churches prove the fact that the solvent ferments of plants can dissolve out the inorganic salts without the medium or presence of any organic matter other than themselves. The exterior layers of the dead remains of oyster or clam shells as found on the ocean shore do not contain much organic life, yet they will be found oft-times nearly perforated by the shell boring algæ, the *hyellæ* and *mastigocoleus*.

I can see no necessity for contending that acid forming bacteria must needs destroy the enamel and dentine by solution of the organic matrix. Environment is one of the basic principles given us by Dr. Black. Let us examine it closely, as it has to do with prevention of decay. (*Dental Review*, February, 1897). He says: "In all of those cases in which teeth seem to have improved in quality, the change of condition has not been in the teeth themselves, but a change has occurred in their environment—in the secretions and fluids—which has affected the active agents producing caries, in the one case extending to immunity, and in the other increasing its activity." Here he admits the possibility of immunity. Is it to be wondered I should advocate such a possibility?

Although Dr. Black admitted to me, and that, too, before "The Odontological Society of Chicago," that twice in his life his teeth did decay and that they are now immune, he further described his mouth as presenting one of the most fruitful sources for obtaining acid forming, caries producing bacteria, that he ever saw. For examples of bacteria grown by Dr. Black with examples of decay artificially produced see Figs. 12, 13, 14. According to his own statement, his teeth do not decay. The environment seems the same, and the same bacteria present which Dr. Miller has shown to produce decay. See Figs. 15, 16; also Fig. 17 from one of my own specimens. I cannot understand such argument. Neither do I see how we can practically change the environment, while we continue to use a mixed diet. We can hardly expect to prevent the growth of acid forming bacteria, when we continue to take them into the mouth by the million with almost every mouthful of food. We can, however, lessen very materially their destructive action on the teeth, by placing the mouth in a condition as nearly as possible self-cleansing. Smooth and polished surfaces afford but little chance for lodgment of the starchy foods, etc., that are changed by these bacteria into ferment.

I am one who believes that it is possible to do what Nature accomplishes in the wild animals, where decay is almost unknown: That is, prevent the decay of teeth. Dr. Black has unconsciously accomplished this result in his own mouth. His teeth present one of the most beautiful examples of immunity artificially produced. Those of you who have seen Dr. Black's teeth, will at once recall their appearance. They are both black and yellow, due to their having absorbed tobacco and other stains insoluble to acid ferments. For example of tobacco stain, see Fig. 18. I mention this case only because Dr. Black has laid so much stress on environment as the one great factor in decay of the teeth. I do not agree with him.

The work of Drs. Black and Williams has been presented in such masterly English, with illustrations so superb, that the profession has been awed into silence. "The pen is mightier than the sword." Many have feared the criticism from such masters who claim absolute knowledge. But it is facts and not fine writing that the profession is demanding. These hypothetical embroideries must come off. Truth needs no such adornment. Her form is so divine, we love her best naked.

(To be continued.)



Facts vs. Fiction.

A Criticism of Prof. C. J. Essig's Paper on "The Relation of Examining Boards to Dental Education," in the November "Cosmos."

But one of two deductions may reasonably be drawn after reading Prof. Essig's paper in the November *Cosmos*; either the writer is making intentional misstatements or he is wofully ignorant of his subject.

This paper consists of a series of general statements without presenting facts to prove that they have a basis outside of the writer's opinion upon which to rest, the principal claim being that the colleges solely and alone have developed the present status of dental education, and that these institutions are perfectly able to take care of the matter for the future. That an "ideal examining board might be helpful to the colleges," provided it was maintained in harmony with the wishes of the colleges. No one to our knowledge has ever denied the good work that has been done by the colleges or the personal sacrifices of the professors. Then why should the colleges deny that loyalty to the profession may exist in others beside the teachers?

Professor Essig starts his paper with the assertion that the evolution of the Boards of Dental Examiners is viewed with the keenest interest and more or less resentment by the dental colleges, and that in this sentiment they are supported by many members of the profession who are not teachers. This being the case, why is it that all the attacks on the examiners came from members of the faculties of a few institutions?

The professor then goes on to imply that all the advancement in dental education has been made through the work of the National Association of Dental Faculties. Perhaps a review of the proceedings of the National Association of Dental Examiners and the National Association of Dental Faculties might cause him to modify this claim and possibly induce him to acknowledge that other forces have had something to do with the progressive movement.

Judging by the published report of the proceedings of the Southern Branch of the American Dental Association, a very pertinent inquiry was made concerning the much-echoed assertion that antagonism existed between the examining boards and the colleges. Dr. E. P. Beadles raised this question: "Who is responsible for that belief" that it existed? and the sentiments which he expressed in the same

**How Dentists
Value
Examining Boards.**

connection are well worthy of thoughtful consideration and enforcement by the profession. We purpose to quote here a few of the expressions of opinion made at that time by some of the gentlemen present.

"It must be admitted that the colleges did not

Dr. C. H. Bland. put forth their best energies until they were pushed forward by the examining boards."

The State boards have done more to enforce the laws, to build up the colleges, than any other thing."

Dr. Jewell. * * * * "The boards are the greatest possible aid to the colleges in carrying out their highest ambitions."

"The claim has been made that the National

Dr. H. H. Johnson. Board of Dental Examiners had no power, no influence, no standing." * * * * "The claim has been made by leading journals that there is no use for examining boards, that there never has been any use for them. I claim that there has been, and still is a need for examining boards. If we do away with examining boards, we take away all stimulus from the colleges."

"I am in favor of standing by the State boards.

Dr. Quattlebaum. Let us pull together and try to get a high standard."

We will also quote here some of the opinions of other members of the profession which have been made during the last two years.

"The College Faculties Association and the

Dr. Fillebrown. National Board of Dental Examiners have done a great work for the uplifting of the profession."—

Cosmos, 1897; page 318.

"The examining boards are the keepers of the portals of entry into dental professional life."—Editorial, *Cosmos*, 1897; page 782.

"The National Association of Dental Examiners must be the power for good in regulating the standard of qualifications of those entering the profession."—Editorial in *Dental Digest*, 1897; page 585.

"I think the examining boards have influenced

Dr. Jarvie. the colleges to require longer terms, and to give more instruction." * * * * "Therefore the examining boards have had a great influence upon the colleges."—ITEMS OF INTEREST, 1898; page 47.

"I want to endorse what Dr. Jarvie has said and

Dr. O. E. Hill. add this: It is claimed and appears that the colleges have not lived up to their own standard, and that being the case, the State Boards of Examiners are simply a matter of necessity, because the colleges send out men that are unworthy. Everybody knows that, whether he is a dentist or a patient."—ITEMS OF INTEREST, 1898; page 50.

We could go on and quote quite a number of others, but we think this sufficient to show that the statements of Dr. C. J. Essig, in a paper entitled "The Relation of Examining Boards to Dental Education," *Cosmos*, 1898; page 960, to wit:

"The knowledge we have of the great work for the improvement of dental education that has been accomplished by the National Association of Dental Faculties, would lead to the thought that no necessity existed for dental examining boards, and that the dental profession might safely leave the direction of the education of students to the former body," is a *thought*, no matter how sincerely believed by the professor, which is not concurred in by many leading members of the profession—not a few of whom are not members of examining boards.

The further statements: "It is largely due to the jealousy of graduates engendered by the failure on the part of the 'community' to discriminate between the graduate and the non-graduate, and with other motives of self interest, that examining boards are in existence today," and "It cannot be truly said that any of the improvements which have led to the present dental curriculum have emanated from examining boards," are also shown by the opening quotations to be theories indigenous to the professor's mind, more than that they are facts entertained by the profession at large.

The opening reference to politics as a factor in the appointment or election "to membership on examining boards, has served to intensify the distrust felt for their fitness," might with grace have been omitted unless it were a fact that members of faculties were absolutely free in that particular themselves. Unfortunately for his statement, the following has appeared lately in current publications:

In the *Investigator*—under the caption "Dental Politics," appears the following: "As offensive a piece of business as was ever seen in a professional body was the cabal formed at Omaha in the Association of Dental Faculties for parcelling out the offices." "When a body of professional men will intrigue and plot to secure little petty places upon committees, the outlook for the future is pretty dark. If that is the caliber of members of a body of college professors, God help the rest of the profession." As the *Western Dental Journal* and the *International* also refer to this condition by editorial comment, it would seem to be established as a fact.

The article by Professor Essig also says: "Ostensibly the function of the examining boards is to ascertain whether applicants for license to dentistry are properly trained in the different branches of the dental curriculum. This is understood as implying dis-

trust of the work done by the colleges, whose diplomas the candidates for license to practice hold as evidence than they have been properly taught the different branches required in a dental education." "Viewed from the teacher's standpoint, the resentment felt by these gentlemen is not unreasonable, when it is remembered that the advancement made by the dental profession since 1840, has been by the labors of the colleges or by the action of their representatives, the National Association of Dental Faculties."

This is not "*ostensibly* the function." *It is* one of the functions—and a prominent writer has justly said "a careful and critical investigation of the methods of this Board (speaking of the New Jersey State Board) proves most conclusively that it is endeavoring to fulfil its duties righteously, and that the attempt is fairly successful."—ITEMS OF INTEREST, 1897, page 610.

Moreover, in our opening quotations, we have shown as a fact what is "*remembered*" concerning "the advancement made by the dental profession since 1840, etc."

Relative to the feeling of distrust set forth in the statement we would submit that if *implied* or really existant, it has as facts for its being, the statements of college professors themselves, to wit:

The editorial by Professor Barrett, in the October number of the *Dental Practitioner and Advertiser*.

"We are not of those who believe that the new requirements adopted this year are of much practical utility; nominally they are an improvement upon those declared in force last year, but really they are made inoperative and nugatory by the permission to accept equivalents. Nothing but an unbending and positive rule that colleges cannot manipulate almost at will, can be of real service. The interests of all colleges alike demand that the determination of qualifications shall be beyond the reach of college authorities."

The Committee on Colleges of the N. A. D. E., in the last annual report, presented October 13th, of this year, commented on this point saying that the phrase "shall be in each case the equivalent" as a condition of requirement is non-specific in character and capable of most easy evasion. "The word 'equivalent' when used in any provision of entrance examination, is a word in which lurks a special danger; as its value really cannot unless specified in the provision, be at any time afterward determined. We still consider the matter of preliminary education, the paramount factor in dental education, and we are not convinced that any serious attempt has yet been made generally by the colleges to see that those coming to them have anything other than the most meagre attainments. Letter after letter has come to us this year which in tenor is

similar to the one read to you this session from a dental college. Members of faculties charging other faculties with unfaithfulness in maintaining anything like a high standard entrance examination. It would seem that these persons ought to know of what they speak." So it appears as a fact that the examiners have not been the only ones to imply "distrust of the work done by colleges," but that the examiners find themselves unable to accept some things at a rating higher than they are accepted by members of faculties themselves.

Our opening quotation must as facts at least raise a fair doubt of the statement, "The profession in general feels very little interest in examining boards, and does not look upon them as at all essential to the maintenance of a high standard in the dental schools," especially when it is to be understood as a fact that the individual members of the profession who are active members of examining boards, number about two hundred and thirty-one. This number as a rule stands as representing the State Societies behind them whose active quorum alone would be not less than ten individuals, making 480 more. It can therefore be reasonably stated as a fact that at least one thousand *active members* of the profession are interested in examining boards and do believe them to be essential. By any thoughtful person this number will be considered a large proportion of the active element in the profession, when it is remembered that the active element as compared with the mass, is really quite limited in number. Nor is one thousand the limit of those interested in examining boards, for if the "murmurings," "whispers" and "outspoken words" made by college professors are to be taken as an evidence of "interest"—the whole army of professors and instructors in dental colleges, are to be rightfully added to this number.

To the statements: "Have they (the examining boards) the perspicacity to discover existing defects in the system? Can they compare in these respects with the Association of Dental Faculties?" "It is exceedingly doubtful whether the examining boards will be able to make this distinction"—it may be replied, that the controlling element in each State Board will in the matter of intelligence, ability and perspicacity, perhaps compare quite favorably with that contained in college faculties.

But the animus of the paper is made especially apparent in the last two pages of the printed report—pages 965-966.

Is it just that all the attacks should be made upon the New Jersey Board, which has set a high standard of requirements, while the criticism upon the examining boards in general is that they are incompetent and cannot approach the high standard claimed to be set by the colleges?

Professor Essig declares that the examinations of the colleges are of a much higher standard than those of the boards and asserts that "there

are colleges whose freshman studies and examinations for advanced standing are so numerous and exacting that it is exceedingly doubtful whether the members of the examining boards could pass them successfully." If this is a fact, how is it that so many of the *graduates* are incompetent; and this incompetency has been proved by the published questions and answers, which have been placed before the profession at various times by different boards?

But returning to the Professor's attack on the **Examining Five-Year Students.** New Jersey Board and the recently enacted law of

that State, there appears to be an underlying motive which is not in keeping with the impression he evidently desires to convey—that the boards are the aggressors in the present unfortunate misunderstandings. The point that the Professor attempts to make is that the 1898 law of New Jersey is a retrogression, as it allows the examination of five-year students. It does seem strange that a man of Professor Essig's knowledge and deep understanding should continue to emphasize this one point, which was so emphatically stated by Professors Kirk and Truman—representing the same institution as himself—in editorials in their respective journals, and which was duly answered and the very deductions now advanced by Professor Essig positively refuted by the facts. As, however, the Professor has evidently been unwilling to look at any side of the question excepting that which suited his own views and wishes, a simple statement of facts may again be advisable.

By referring to the 1895 report of the New Jersey State Board of Registration and Examination in Dentistry, we find that the report recommended the abolition of the registering and examining of five-year students. The same report recommended the insertion of a clause allowing licentiates of other States having an equal standard, to be licensed without examination. (See Sixth Annual Report, page 4.) The same year, 1895, a bill carrying out these ideas was introduced in the Legislature; it passed the Senate but was defeated in the House. The Legislative Committee of the State Dental Society was active in its efforts to secure the passage of the bill and members of the State Board appeared before the Judiciary Committee and spoke in its favor.

In 1896 the board again urged the passage of the bill introduced the previous year. (See page 6, Seventh Annual Report.) The bill was introduced and hard work was done to secure its passage, but it was again defeated.

In 1897 the Commissioners urged more firmly than ever the necessity of changing the bill on the lines already indicated in the reports of the two previous years. (See pages 6 and 7—Eighth Annual Report.)

The Legislative Committee of the State Society prepared and intro-

duced this year a bill containing the best features of the previous bill with the addition of several new features of an advanced standing. The State Dental Society Committee were untiring in their efforts for its success, and the bill, after being slightly changed, finally passed both Houses; the Governor's signature was affixed and the bill became a law on March 17th, 1898.

These reports plainly and irrefutably show the position taken by the State Society and the Dental Commission, and that position has been clearly set forth in the answers to the editorials in the *Cosmos* and *International*.

How is it that Professor Essig can make such misstatements as are found on pages 965-966?

It is certainly surprising that the same point should have been raised by the Editor of the *Cosmos*, and after being answered fully should again be brought forward by another professor in the same institution.

The suggestion is respectfully made that a course of constitutional law might be useful to Professor Essig and might convince him that New Jersey has not taken a back step, but, by passing the law of 1898, has taken the only possible step to eliminate the objectionable five-year clause of the law of 1890. The practical result of this step Professor Essig will see set forth in the Ninth Annual Report (1898) of the New Jersey State Board.

In conclusion I would suggest that the colleges, who say they deprecate the present misunderstandings between the faculties and the boards, should discontinue these attacks and slurs, which, be it remembered, have in *every* instance emanated from them, and work for the good of the profession, jointly with their brother dentists, who are on the various examining boards.

G. CARLETON BROWN,
Chairman Committee on Colleges, N. A. D. E.



A Last Word.

By E. K. WEDELSTAEDT, D.D.S., St. Paul.

In the fewest words possible, I desire to close the discussion of Chapter XII., American Text Book. There are two things that it seems necessary for me to state. First—I do use cement, oxy-phosphate (and oxy-chloride also), but I do not use it in every cavity in which I am going to make a metal filling. I do cap pulps with soft cement for many children under fourteen years of age with the feeling that the pulp may live, but with the belief that it will die. Secondly—I do not know Dr. Clapp, have only the most friendly feeling for him, and I am not criticizing, as Dr. Ottolengui says, "the man, but his methods" and the principles which he has seen fit to publish. Dr. Clapp advances these ideas, viz.: That we should first fill those cavities in which metal fillings are to be placed, with soft cement, filling the cavity two-thirds full, and then into the soft cement crowd pieces of the filling material (gold or amalgam), either of which we may be about to use to fill the tooth permanently. After the cement has hardened, trim away from the margins the cement that has been forced from the cavity by placing the first pieces of our metal filling into the cement. The margins must be free from cement. Then continue to pack our filling material against that already anchored in the soft cement. Sole reliance is placed on the anchorage of the first pieces in the cement. Not any other mechanical or supplementary anchorage is made. This is the sum and substance of what I have been criticizing. I wish my readers to bear this in mind. All that is necessary to say in condemnation of principles and methods of this kind has been said in my former articles. I would not have repeated this much, but I wish my position to be clearly understood.

Exception has been taken by some to the published results of my experiments with Weston's insoluble cement. This should have been explained. Some time before anything was published in regard to this subject, I wrote Dr. Clapp and asked what filling material he used to gain the ideas he saw fit to publish. He wrote and told me a good combination filling of amalgam and cement could be made by using Weston's cement and Fellowship alloy. The Fellowship alloy I was using at the time set in ninety seconds after it was amalgamated, and I made up my mind that Dr. Clapp either had a different kind of Fellowship from that

I was in the habit of using, or else he was a good deal of a joker. (I have learned within a week that there are two kinds of Fellowship, slow and rapid setting.) This is why I made some experiments with Weston's cement, and the above also tells why I did not make combination amalgam and cement fillings using Fellowship alloy.

Tests of Cement. And as my experiments with combination amalgam and Weston's cement fillings have closed, I do not desire at this time to open them again. Since

my last paper was written I have spent somewhat over six weeks in my laboratory investigating cements. I have made about three thousand experimental fillings, and I think about one thousand experiments, more or less. Twenty-five or more different oxy-phosphates have been tested. Also a few oxy-chlorides. Green teeth have had carefully prepared cavities made in them and then filled with Weston's cement. After the cement had set, these were placed in water that had a trace of aniline in it. The water in some cases was merely at room temperature, and in others at 98° F. These have been allowed to stay in the bath for twenty-four, forty-eight and seventy-two hours, with what result? Only to discover that traces of aniline could be found in every portion of the cement. Very often the aniline could be traced clear around the axial wall. In one case where a cavity in a green tooth had been filled with Weston's cement, after the cement had fully set, it was placed in a glass of water at room temperature, and in just thirty-six hours there was not a trace of the cement left in the cavity. It had been dissolved out.

Dr. Ridout made and fitted three gold crowns to the roots of three green teeth. Dr. Ridout is a man of great skill in this particular line of work, and the crowns were as perfect as human ingenuity could make them. They were seamless, and Dr. Ridout cemented them to the roots, using Weston's cement. These were placed in water at 98° F. for twenty-four, forty-eight and seventy-two hours, with what result? Only to find on cutting the crowns from the roots that the longer they remained in the bath the greater was the penetration of moisture.

I made a series of twelve fillings from one mix and mass of Weston's cement. Six of the fillings were tested dry, and six were tested after being in a bath for different periods of time. A comparative test in regard to their ability to withstand pounds pressure in the dynamometer was made; also a test to note the penetration of moisture. Every filling of Weston's cement that was examined after being in the bath showed traces of aniline from circumference to center. And when it came to comparing the amount of stress the wet and dry fillings carried—well, the least said the better.

**Tests of
Combination
Fillings.**

Green teeth were then taken, molars, cuspids and incisors. These had carefully prepared cavities cut in them. The margins in every case were most carefully planed with sharp chisels. These were filled with combination fillings, à la Clapp, Weston's cement, and different makes of alloy. After the fillings had been made, they were placed in water at 98° F. for twenty-four, forty-eight and seventy-two hours. (There was always a series of three fillings made.) After they were removed from the moisture, they were either broken in a vise or the filling was pushed out by placing the tooth in the dynamometer and exerting stress on it. And now what were the results? I discovered that moisture penetrated the cement of all but one, and in this one the moisture had just reached the cement. This tooth was in the bath but twenty-four hours, was an upper molar, and the cavity had a broad, flat seat at the gingiva. I also discovered that the thinner the veneer of amalgam the greater the penetration of the moisture into the cement. I discovered too, that these same thin veneer fillings of amalgam would frequently carry five pounds of stress before the amalgam would break from the cement. This took place with three fillings made in incisors. Three proximal combination fillings of amalgam and cement in cuspids carried twenty, twenty and twenty-five pounds respectively before being pushed out. A lateral incisor with as perfect a filling as I could make by this method carried thirty pounds before the anchorage with the cement was broken. Three large proximal cavities in molars were prepared, and combination fillings of amalgam and cement made in them. The cavities in these were seven, eight and nine millimeters respectively, linguo-buccogingivally by from three to five millimeters deep from the pulp to the margin (disto-pulpally). These carried one hundred and fifty, one hundred and ninety, and two hundred pounds. The fillings did not break from the cement, for the reason that the amalgam was pushed against the axial wall in each case. But they did break where the amalgam had been packed to the amalgam that had originally been anchored in the cement. This is just where the greatest strength is required, but at the exact moment it was needed, it failed. Dr. Clapp may be like my friend Dr. Flagg of Philadelphia, who said, "No man has power enough in the muscles of his jaw to bite forty pounds with his teeth." I believe Dr. Jones of New Haven quickly demonstrated to Dr. Flagg's satisfaction that he could press on the gnathodynamometer, not forty, but two hundred and fifty pounds with his molars, and then not make very much of an effort. So do not be deluded; men can and have repeatedly closed my machine (three hundred and forty pounds) with their molars.

I am glad I went into this controversy, for the dental profession

is going to have better cements. The makers of the cements have awakened to the realization that every man is liable to test the cement he is using, by making a filling and dropping it into a bottle of ink to note if it is penetrated, and if so they do not wish to use it. And there is little need of its being penetrated. There are water or moisture-proof cements to be had, and these we wish and will have.

I am unwilling to discuss again the partly prepared and filled cavity (combination filling, gold and cement), sent by Dr. Clapp to Dr. Ottolengui, criticized by him and then sent to me. It is sufficient for me to know that every fundamental principle governing the packing of gold was violated in packing the gold this cavity contains. It is not my fault that Dr. Ottolengui did not notice this nor the condition of the cement. In regard to the "proper application of the method," I desire to say there is no such thing as "properly applying" this method, if the rules laid down in the Text Book are followed. Dr. Clapp tells, as I have said before, his own story in writing and illustrations. They are all of the past, have long since been condemned and cannot bear a scientific investigation. So the least said the better.

I give the readers the results, for I have not the time to enter into particulars in regard to the work I have been doing. I have spent too much time on this work as it is. It has cost me a fortune to obtain these results, and so I must begin to attend to my long neglected business. I ask of that portion of the dental profession who are making combination fillings of gold and cement, or thin veneer amalgam fillings, anchored in soft cement to fill a cavity in a freshly extracted or green tooth by this method, and then subject it to a bath of ordinary water that has a trace of aniline in it, at room temperature, for twenty-four or forty-eight hours. At the end of this time, remove tooth, wash it in ordinary water and dry in muslin. Now place the tooth in a vise and crack it. Remove the filling and examine the cement, using a one-inch power in the microscope. It will tell its own story. The surprises in store for those making this experiment will be sufficient for each and every one making it. Just as surely as there is penetration of the aniline into the cement, just that certain may the experimenter be that the fluids of the mouth will also penetrate the cement. We now know *why* the cement under so many of our gold and amalgam fillings stink so badly, why so many cement fillings stink, and why the cement in so many gold crowns is in such bad condition. The why and proof we have. But this will all shortly be different, for the makers of some of our cements have already improved their wares, and others will also do so.



A Mechanism for Retracting and Retaining the Side Teeth.

By E. S. FULLER, D.D.S., Piqua, O.

Fig. 1 illustrates the condition of the mouth after extraction of the first molar's roots. Make German silver bands about 32 gauge and wide enough to reach from the gums to the occlusal surfaces, for the two molars. Burnish closely around the teeth and take a plaster impression with the bands in place. Make a model of any good investment com-

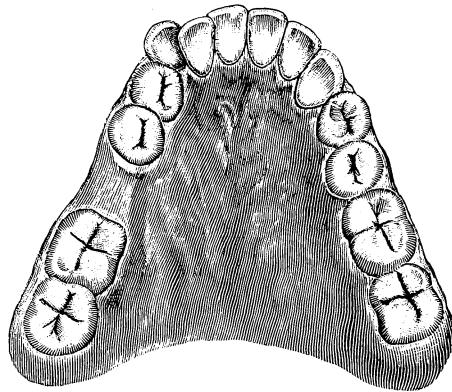


FIG. 1.

pound. Solder the bands together. Thread a piece of tubing one-quarter inch long with a tap fitting the No. 3 hole in the Martin screw plate. Place it in alignment with the teeth to be moved by passing through it a piece of iron wire and resting it against the cuspid at the proper place; solder it to the anterior band on its buccal surface. Make a short heavy right angle hook and solder it to the lingual surface of the band opposite the tube. Make three headed bolts and thread in the No. 3 hole in screw plate. The heads should fit the No. 4 watch key. They should be made from wire drawn down through one or two holes only, to

insure its being uniform in size, and to avoid too much spring. It should not be annealed.

The bolts should reach from the mesio-buccal angle of the cuspid, first bicuspid and second bicuspid, respectively, to the anchor tube on the molars. Roll down a piece of stiff, heavy wire to about 32 or 35 gauge and about one-eighth inch wide. Cut from it five ribbons, two for each of the bicuspids and one for the cuspid. Each should be reinforced at one end with a piece of ribbon one-half inch long. Punch a hole in the reinforced end of the cuspid ribbon to fit loosely the hook on the anchor bands; bring it forward and around the cuspid to its central axis and solder a short piece of smooth-bore tubing to it at that point. One of the two ribbons for each of the bicuspids should carry a threaded tube instead

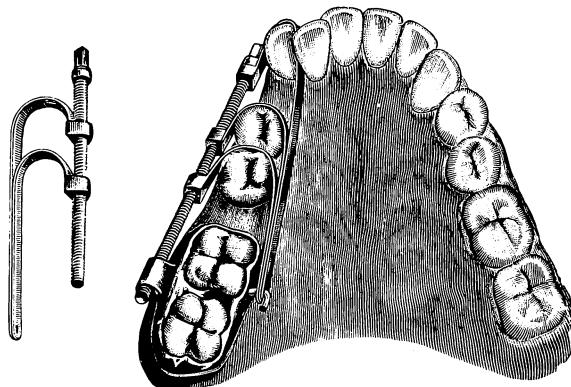


FIG. 2.

of a smooth bore, and should be about one-quarter inch shorter than its fellow. The parts should now be heavily gold-plated and polished and the anchor bands cemented to the teeth and allowed to set fully. Then catch the second bicuspid ribbon with the smooth tube on the hook, carry it forward and around the tooth and pass the short bolt through the tube into the anchor tube. Give the patient a key and instruct him to tighten the screw until pressure is felt. This to be repeated two or three times a day until the tooth is in the desired position. Replace the ribbon with one having a threaded tube.

Select the smooth-tubed ribbon for the first bicuspid and hook it on the anchor hook also. Pass the next size bolt through it and also through the threaded tube on the second bicuspid and into the anchor tube. It may be necessary to exert a little pressure on the bolt to recover any retrograde movement of the tooth occasioned by the appliance having

been removed. Retract the first bicuspid as you did the second and substitute the smooth tube on the first bicuspid for the threaded one. Place the cuspid ribbon in place and pass the long bolt through its loose tube and through the two other threaded ones and finally into the anchor tube, Fig. 2, and retract as before. The cuspid will move posteriorly, but the bicuspids will remain stationary, the appliance acting both as a power machine and a retainer at the same time. The positive action of a screw is secured. The teeth are held so rigidly that little soreness is produced.

Gum guards are not necessary and there will be no danger of the teeth rotating while being moved. A single bolt is used as power bar and can be made as heavy as required. There are no nuts to loosen.

It can be easily and quickly removed and cleaned. Advantage can be taken to receive the best possible anchorage the case affords. It may be applied to a sagged arch, or anchored to a single molar if necessary with lessened liability to tipping, by soldering extension bars to the bands.





SOCIETY PAPERS

The Extraction of the First Permanent Molars. A Beneficent Conservative Operation.

By W. MITCHELL, D.D.S., London, England.

*Read at the Twenty-Fifth Anniversary Meeting of the American Dental Society of Europe
Held in London, August 3d, 4th, 5th, 6th, 1898.*

Much has been written upon, and much discussion has been evoked in connection with, these more or less troublesome, and often unsatisfactory organs of mastication. That they are probably the source of more trouble to the patient and more solicitude to the dentist than any of the other teeth, I think we are all agreed, and not infrequently after we have done our best by the different modes of treatment and the use of tried and newly acquired agents, both medicinal and reparative, have we been compelled to acknowledge defeat in our object, viz.. the comfortable, useful and unprejudicial retention of these teeth.

It is not the province of this short paper to go into the physiology and histology of the first permanent molar, which differs in a general way but little from that of the other teeth, neither shall I go into the pathology of dental caries, both of these subjects having their own worthy exponents, who, at different times, have treated these subjects in masterly fashion according to their individual knowledge and capacity.

The points I wish to bring forward for your consideration are: Why and when shall this operation, *i. e.*, the extraction of the first permanent molars, be performed?

I purpose by my deductions, based upon experience, to convince those who have heretofore been opposed to the extraction of these teeth that we have a practical and legitimate means of preventing, to a great extent, the ravages of dental caries, especially that form produced by lateral pressure, and securing a more comfortable and serviceable dental armament by the more perfectly safeguarding the interproximal space than is possible by flat and imperfectly contoured fillings; and later by

affording patients a more perfect masticating surface; and last, but not by any means least, the satisfaction of securing to patients in the most practical way probable immunity from constant and prolonged dental operations during the greater part of their lives.

Briefly stated, my proposition is this: Where the first permanent molars are in a condition of decay or retrogression, from whatever cause, that suggests the probability of their being a source of continued trouble to the patient, I would strongly urge their removal, provided the operation be performed at the right time. In order to secure the desired results, it is absolutely necessary that the child be constantly under the supervision of its dental attendant, with whom then rests, to a very great extent, the condition of the mouth and the subsequent condition of the teeth.

Nearly twenty years ago I first gave this subject my attention; and while I had but little opportunity at that time of putting my ideas into practice, I have, as time has gone on, been fully convinced by results that the operation is a good one, conferring as it does a lasting benefit to my patients and a great deal of satisfaction to myself.

The age at which this operation should be performed must be determined by the dentist, according to the requirements of each individual case. My

Age at Which to Extract. experience is that the age and development of the patient varies somewhat, my cases varying from ten and one-half years to twelve years and possibly a few months, depending usually upon the accelerated or retarded general development of the child. You, gentlemen, as well as I, have seen cases of dental precocity that were difficult to account for, which accentuates what I have previously said as to the necessity of deciding each case upon its individual merits.

I would strongly urge that this operation be performed from four to six months prior to the eruption of the second permanent molar. The time can be determined by the eminence and rounding of the superimposed tissue over this tooth; an idea can also be formed as to the near or remote approach of the second permanent molar by puncturing the gum with a fine, sharp-pointed exploring instrument after cocaine has been applied. This means of diagnosis is rarely required, as the objective symptoms incidental to the eruption of a molar tooth are usually a sufficient guide when to operate.

After deciding upon this operation, it is imperative that all four of the first permanent molars be extracted, even though one or two be quite sound. By this means alone can the best general results be attained. By operating at the time suggested, the second permanent molar will travel forward during the process of eruption, and its antagonizing tooth

will do likewise, and the result will be the securing of a more perfect articulation than where no regard as to time or completeness is paid in connection with this operation.

Some criticism will undoubtedly be advanced as to the possible modification of the antagonism of the teeth, contraction of the dental arch, shortening of the bite, etc. I can only say that the cases I have operated upon—a few of the models of which I will pass round for your inspection—speak more eloquently than I can as to these points.

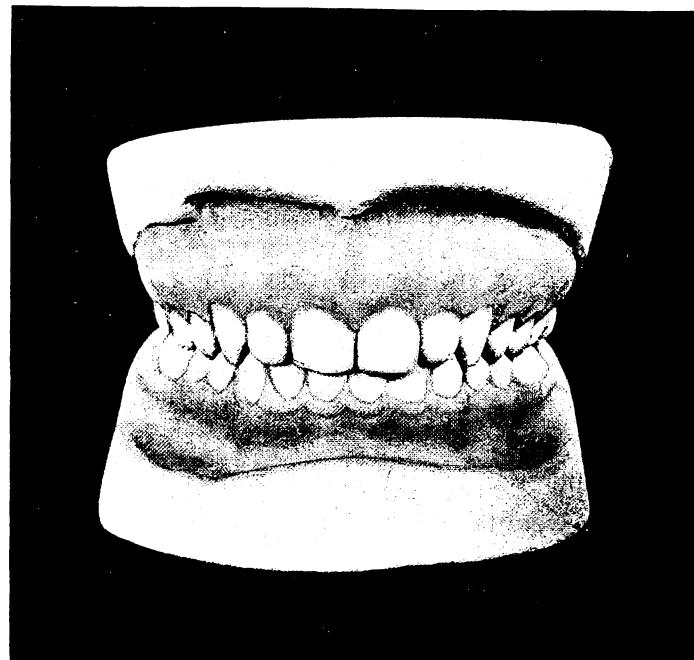


FIG. 1.

In no case have I noticed any change in the features or contour of the face (this is, undoubtedly, what would occur were the dental arch contracted by the extraction of these teeth), but this is prevented, as shown by the models, by the second permanent molars rapidly assuming the position of the extracted teeth.

As to any material change taking place in the occlusion of the second and third molars, thereby decreasing their efficiency, I have not yet discovered.

We all know that an ideal articulation is practically one of the creations of our own imaginations. What may be an ideal to one person

would not be to another, and ideals change with time and circumstances. What might be considered an ideal dentition at twelve years of age might be an incongruity at forty, hence time, circumstances and surroundings must be considered in connection with our ideal dental armament. Therefore, I contend that the nearest approach to an ideal condition of the mouth at any age is where its dentition is in the best condition to resist decay, to be in the most effective condition for mastication, and at the same time to be the least possible trouble to both patient and dentist. If my contention is correct, then the operation which I advocate answers these requirements better than any other method of procedure with which I am acquainted.

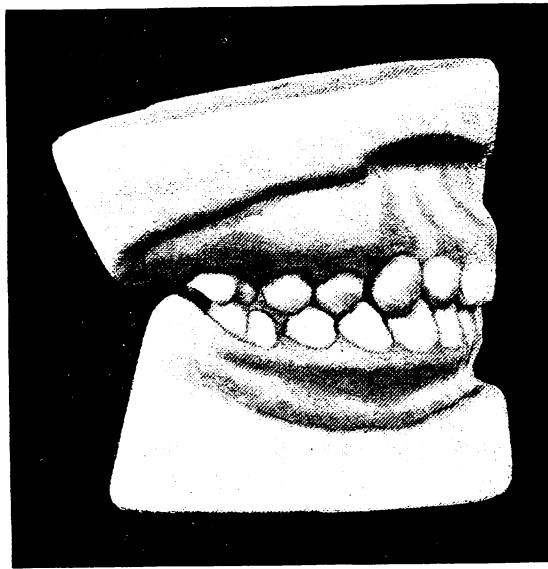


FIG. 2.

I will present a few cases which, with the exception of Case 1, are illustrated by the models.

Mr. A., aged eleven years at time of operation.

Cases from Practice, First, inferior molars imperfectly developed, large anterior approximal cavities, grinding surfaces honeycombed by decay, first superior permanent molars imperfectly developed but not decayed. Child fairly well nourished, growing rapidly. Family history, from a dental standpoint, bad—father averaging more than one filling per tooth, has several artificial crowns and several extractions; mother wearing full upper and lower artificial dentures; elder brother had two or three fillings

Case 1.

in all teeth except two, which were crowned; elder sister practically a *replica* of the foregoing. After considerable argument I prevailed upon the father to allow the extraction of the four molars; he demurred very much at the extraction of the two upper ones, but I said I would extract all or none. I extracted the teeth. Eight years after I put a small gold filling in a fissure in the second left superior molar, and three years later I put a similar filling in the opposite tooth. I found the articulation prac-

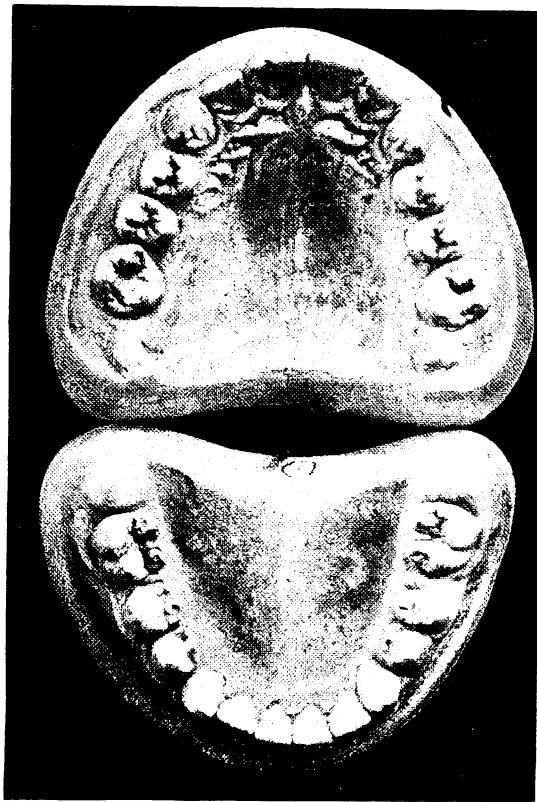


FIG. 3.

tically perfect. These were the only dental operations required in eleven years, and today he is the only member of his family who has good teeth and a really comfortable dentition, although apparently of the same type as his father.

Case 2. Miss B., aged eleven and a half years at time of operation; child well nourished, growing rapidly, Fig. 1. Condition of teeth: ten fillings in various

stages of efficiency in the four first permanent molars, with cavities in the approximal surfaces of the second left inferior bicuspid and distal approximal surface of first left inferior bicuspid. Family history, from a dental standpoint, not good on maternal side; do not know condition of father's teeth. Mother's teeth required much filling; brother, about two years her junior, has required twenty fillings in his teeth during the past seven years. This latter patient, I may say, was not under my care when I could have extracted his first permanent molars to advantage. Another brother,

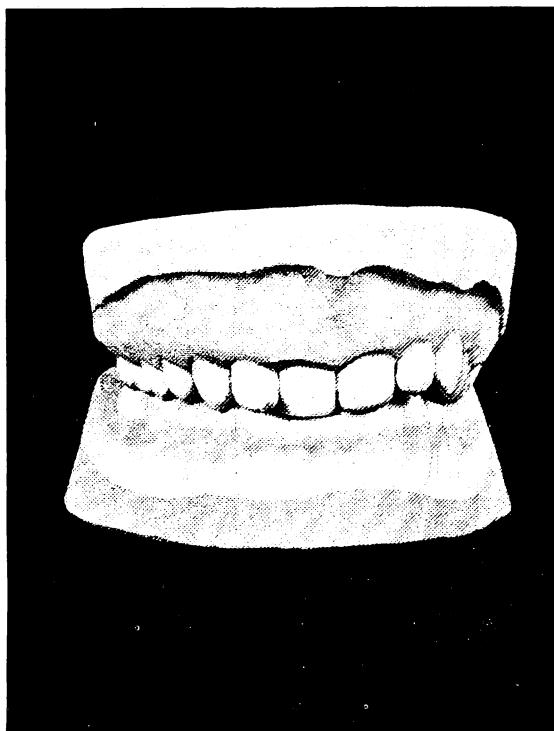


FIG. 4.

about three or three and a half years her junior, required five fillings in his first permanent molars in five years, and four fillings in other teeth. A still younger brother, for whom I extracted the first permanent molars, has required six fillings in the other teeth in five years, while Miss B. has only required five fillings, all told, since the extractions. I would say, in respect to these children, that they are all well nourished, live in the country, are well developed and all well above the average height, and their teeth are apparently of the same type and quality.

Figs. 2 and 3 show the case three years after extraction; present condition of mouth good.

Case 3. Master C., aged eleven and a half years at time of operation, Fig. 4. Family dental antecedents not good; father, mother and elder brother had much

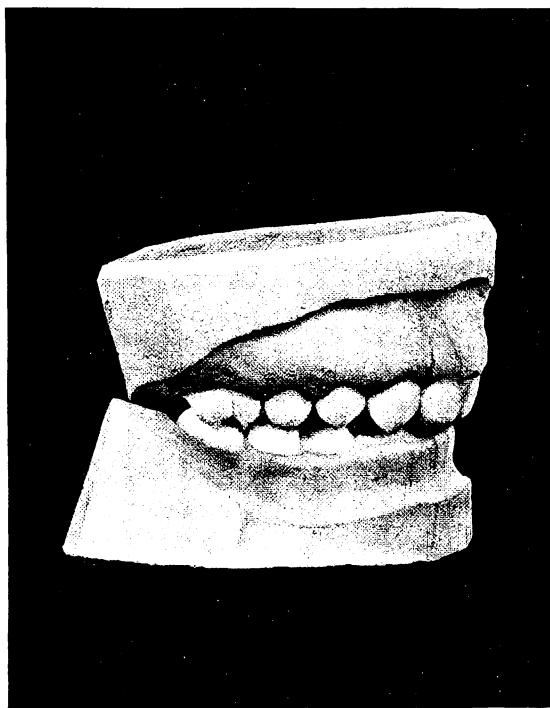


FIG. 5.

trouble with their teeth. Father and mother both wearing partial artificial dentures. Patient required ten fillings in the four first permanent molars inside of three years; twelve fillings in the remaining teeth have been required during the past four years. The close bite, as illustrated by the models, is hereditary, being identical with that of the mother. There was no attempt made to correct the irregularities or malocclusion of the bicuspids. The parents thought, the child being comfortable, they would not resort to regulating. The quality of these teeth is below the average; present condition of the mouth fair, but better than it was at the time of extractions. Figs. 5 and 6 show the case three years after extraction.

Miss D., aged about ten and a half years, Fig. 7.

Case 4. When upper molars were extracted patient went away to school, and while there had operation completed, but only after allowing some months to elapse. Family dental history bad on paternal side, father wearing full upper and partial lower dentures. Condition of teeth prior to operation imperfectly developed

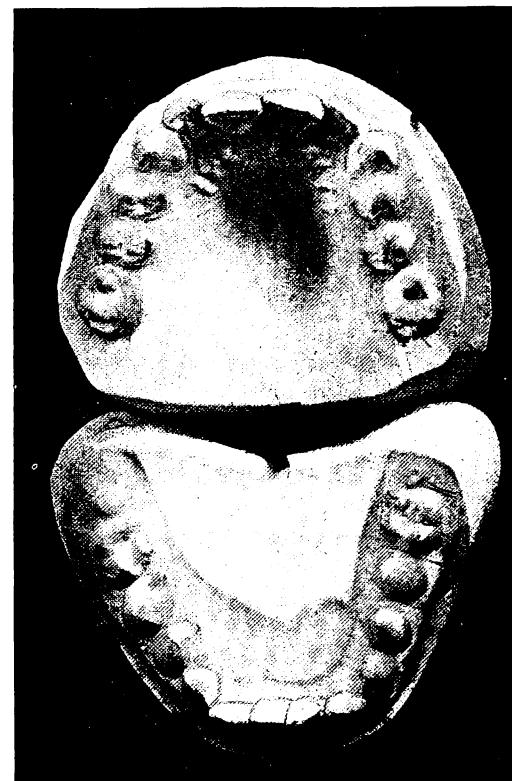


FIG. 6.

and rapidly breaking down. Figs. 8 and 9 show case five and a half years after extraction of upper molars, during which time but two small fillings have been required on palatal surface of superior lateral incisors. It will be noticed how the delay in extracting the lower teeth has modified the occlusion as compared with the other models, leaving a large undesirable interproximal space. Present condition of the mouth very good.

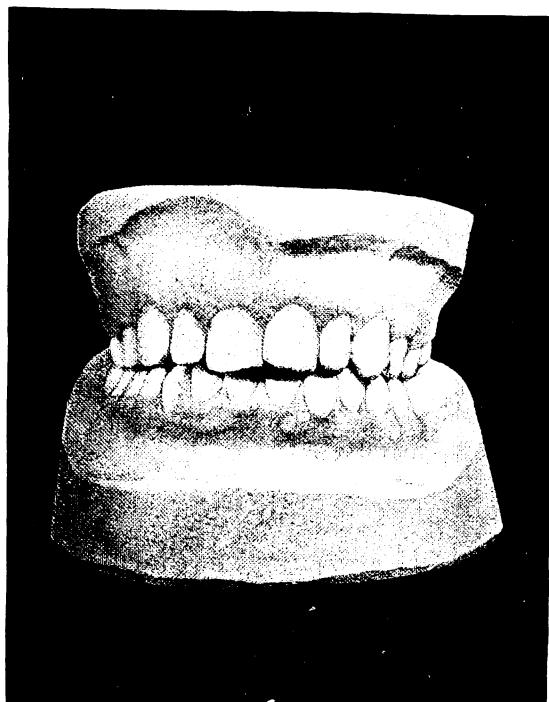


FIG. 7.

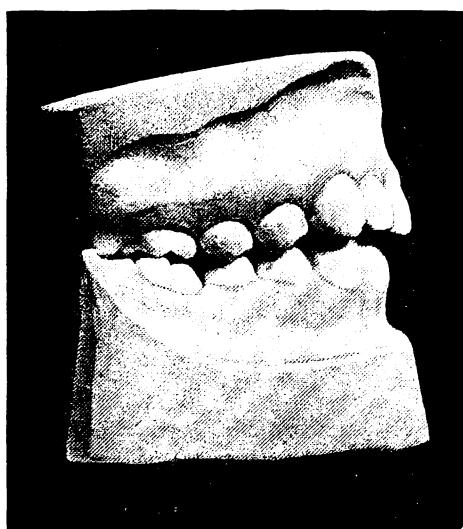


FIG. 8.

Miss E., aged about eleven years at time of operation, which required ether, as the teeth were so badly broken down. Family history, from a dental standpoint, bad, father and mother having worn partial artificial dentures for the past fifteen years, elder brothers and sisters especially requiring continuous dental attendance. Patient of highly nervous temperament and advanced mental development for her years, rendering the prepara-

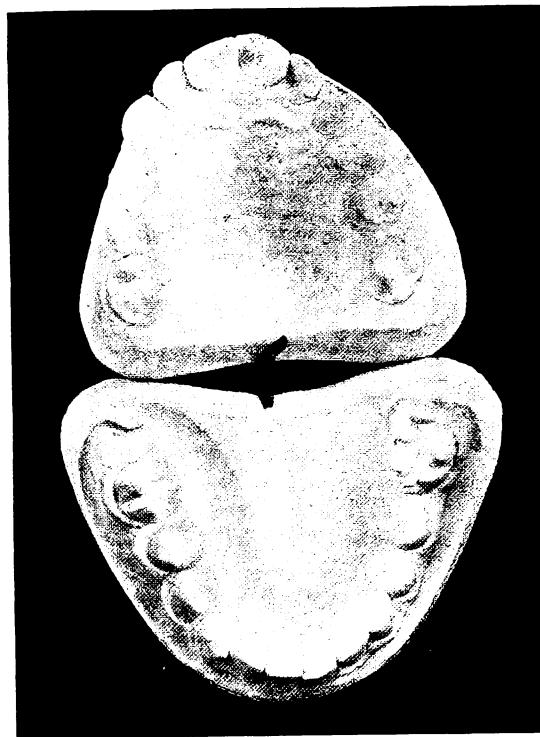


FIG. 9.

tion of cavities for filling properly practically an impossibility. The first permanent molars I had filled many times with cement and gutta-percha, also with copper amalgam, only to see them break down again about the fillings, and at other points. The remaining teeth are of a frail, delicate nature, and owing to the natural arrangement of the upper ones cavities which are a *replica* of the father's have formed on the approximal surfaces of the incisors which I have filled. The record of the case shows that in about four years thirteen fillings were required in the four first permanent molars owing to the causes already mentioned, as well as nine fillings in

the other teeth. The model of the upper jaw, Fig. 10—I am unable to find the model of lower jaw which has inadvertently been thrown away—shows the case eighteen months after the operation. The present condition of the mouth is better than it has ever been, but not quite satisfactory owing to the great tendency of the teeth to disintegrate, occasioned by their frail development.

To summarize in regard to this operation, I would say it has proved a good one in my hands, looked at from any standpoint, as I feel that our first duty to our patients is to put their mouths in the best and most lasting comfortable condition possible, securing to them at the same time



FIG. 10.

the most serviceable and effective masticating surfaces, in conjunction with an immunity from the requirements of constant subsequent dental operations. These are *not* specially selected cases, but models were made from impressions taken as opportunity offered, and have, I hope, demonstrated the possibilities of this operation *when performed at the right time*, to be as claimed for it in the title of this paper. This operation is *not* of universal application, but is one that, in careful hands, and under proper conditions will benefit the patient more, and probably reflect as much credit upon the operator as any with which I am acquainted.

At the risk of repetition I will finally urge *the necessity of making the operation complete at the right time*.

The Jenkins System of Porcelain Fillings.

By R. OTTOLENGUI, M.D.S., New York.

Read before the Central Dental Association of Northern New Jersey, October, 1898.

On the day when I began the study of dentistry my preceptor put me out in the laboratory and gave me a book to read which I think was Harris's Principles and Practice of Dentistry; I opened the book at haphazard and read somewhere the constituents of enamel, and I immediately concluded that I would be the one to invent the ideal filling; that I would find the means of taking the constituents of enamel and putting them together so that they might be used in a tooth as a filling. That was some twenty-one years ago, and I have not yet found the formula for mechanically producing enamel. Yet tonight I am presenting, and to some extent advocating, a system which perhaps is the highest achievement in this direction.

Early Experiments in Porcelain Fillings. It is hardly necessary for me to go over the history of what may be called porcelain filling, except briefly. We all remember the porcelain fillings which were made by Land, and which were not all that was claimed for them; then the glass filling of Herbst and later on a material which was furnished by dental manufacturers and largely used by dentists and other men in Europe, which was called porcelain, but which was really glass. Those fillings I think might be considered a high fusing glass; it was a glass which could be fused on gold foil without melting the gold. This seemed to be an advance over the Land method. So far as the mechanical difficulties in the way were concerned, I think they were met fully by this German preparation, but it was not durable and cracked readily in the mouth, even in places where no strain (or I believe the Western word now is "stress") was put upon it. Dr. Jenkins imagined that he could improve on this, and did to some extent by flowing glass over the filling after it was made, thus accomplishing two things which were eminently satisfactory; first, the filling could be put into the mouth and ground and then this glass could be flowed over it, the glass fusing at a lower degree than the body of the filling. Second, a lustrous surface was thus produced. But even with this Dr. Jenkins soon discovered that he had not yet reached an ideal method of work.

I believe I am rightly informed when I state that during his various holiday seasons he has visited nearly all of the glass and porcelain factories in Germany, and it was as a result of these many visits and his study of the various bodies used in the works of that region that he has eventually produced the porcelain which he is now introducing. I say introducing, because Dr. Jenkins writes that he has not yet surmounted all the difficulties in the way of manufacture; that even to produce the eighteen shades of porcelain which he furnishes, so that each mass or body shall always have the same shade is exceedingly difficult; and it is also a very expensive process. But he believes that some of the difficulties are gradually disappearing under the hands of those who are making the porcelain under his guidance, and that in the future it may be possible to produce the material in an even more satisfactory form and at a more satisfactory price.

The Ideal Filling. What is the ideal filling? It seems to me that the ideal in filling, as in everything else, must depend somewhat upon the mind which conceives the ideal.

The ideal of one young woman is a blond man and the ideal of another young woman is a brunette, and it would be very difficult to say, speaking generally, whether the blond or the brunette is really the ideal man. So it is with these fillings; Dr. Jenkins has reached the absolute ideal for Europe, but I question very seriously whether he has reached the ideal for America. The American people are becoming national; originating from heterogeneous sources they are becoming rapidly homogeneous in national character, and if there is one predominating characteristic in the American, it is that utility, practical utility, must supersede everything else; estheticism or any artistic standard is secondary in the mind of the American to utility. Thus we find that in Europe the people object to a display in the mouth of anything that touches on artificiality. The American desires that his artificial teeth may seem not to be artificial; so much so that many dentists today say, "We hope that we do not make *false* teeth; we make *artificial* teeth." But Americans have not been educated up to the point of considering that there is any objection to having a part of the tooth false. Europeans do. I cannot refrain from repeating a little incident which I have told before: A European noble lady once came into my hands for a very simple service; she wished a porcelain crown reset. I pointed out to her that several of her incisors required filling, and she said "Yes, but I must return to Europe before I can have them filled." That rather surprised me, who had been taught that American dentistry surpassed all other dentistry in the world, and I asked her "Why?" and she replied, "Because I cannot get anything in this country but gold; in America you fill teeth with gold, and in Europe we

fill teeth with something the color of the teeth." I answered "Yes; but we can fill a tooth with that white material, if you wish it, in this country." She said, "Can you? Then why do you not do it?" and I replied, "Simply because in this country we prefer what is permanent, and those white fillings are not permanent." "Oh," she said, "that is just my objection; I would rather be temporarily beautiful than permanently hideous!"

That voices the position of practically 99 per cent. of Europeans; they would rather have something temporarily in their teeth which does not show, than to have the permanent gold fillings of the Americans. Undoubtedly there are some Americans who would feel the same way, but how many of them are there? In America the question is, "Will it last?" and patients will come in and complain that a filling which was put in *only five years ago*, is out. So the standard of the ideal is different. Europeans have been accustomed for the last twenty-five years, when they have been unfortunate enough to have cavities in the front of their mouths, to return to the dentist once in a year or in two years to have "those nice white fillings" put back. Consequently the porcelain filling, which looks so much more natural, is the ideal filling for Europe, even if it must be replaced every two or three years, although they will probably, in many instances, last much longer. But in America whilst, as I have said, there are some people who feel that they prefer to have the porcelain filling because it does not show its falseness, I believe that the great majority of them, if you introduce the subject of porcelain fillings, will say, "Will it last as well as gold?" and that will be a serious question for the *honest* dentist to answer; because the standard today in this country, I am proud to say, is higher in the matter of filling teeth, than it ever was. The requisites today for making a perfect filling are more rigid and more exacting than ever. The man who puts a filling in today puts it in to stay not for a day, or a month, or a year, but forever, and there are thousands of dentists in this country who can make gold fillings which will endure and not have decay recur around the margins. If this question of the margin of gold fillings has become so important that the dentist of today before filling a cavity polishes the edge and examines it again and again with a magnifying glass of ten or twenty diameters, you cannot attain that standard which we would call ideal, even if you do match the color, unless the margins of the porcelain fillings can be made as absolutely perfect as the gold fillings; and while I shall in a moment advocate the Jenkins method, I wish it to be distinctly understood that I limit it in its application to those places where the margins can be made as perfect as they are with gold, and I ask every dentist who hears me and who undertakes this work to feel dissatisfied with any porcelain filling until the margins are as perfect at every point as he could expect them to be with gold filling.

**The Ideal Cement
Undiscovered.**

To a limited extent the Jenkins system attains that requisite; that is to say, where the cavity is accessible and care and skill are used; a porcelain filling with the Jenkins body can be made, which, when placed in the cavity will have such perfect margins that the eye of man cannot detect the point of union. At that moment we come to a difficulty, and that is the cement. These porcelain fillings by the Jenkins method are made with No. 30 rolled gold, and of course that means that there is a very slight space between the filling and the bottom of the cavity, and there is no cement in the market in America known to me, which can be mixed so thin as to occupy that space which was occupied by the gold filling, and occupy no more space, and have strength and adhesiveness to retain that filling in the cavity. A curious thing has been told me by manufacturers of phosphate cement, and that is that climate has such an effect upon the cement that those cements which are vaunted and relied upon for this work in Europe are worthless in this country, because of our climate, and *vice versa*, the cements which are very excellent for filling purposes and for attaching crowns in this country have proven failures on the other side, and have been returned with the request that the money be refunded. I do not today know a phosphate cement that I can obtain and use in this country with which I can set a porcelain filling to my entire satisfaction. By that I mean that I would like to be able to set a porcelain filling so that when set *absolutely no cement is visible*. In other words, a cement which would be so thin that it would occupy no more space than the matrix did. I have used a number of cements for this work and have discarded them. About a year or more ago I used the German Fused Oxide, but discarded it; since then I have discovered that there is another form of it, the powder of which is so fine that I can make a very smooth cement, whereas the lot I had at first was very gritty and consequently absolutely unfit for the purpose of cementing these inlays. With the German Fused Oxide I am getting better results than with anything else that I have yet tried, but I say that before we can have the ideal in this country, a cement must be made so as to be used very thin, and I offer a suggestion to the men who are manufacturing cement; formerly we spoke of oxychloride *filling* and oxyphosphate *filling* material; now these are all spoken of as *cements*, but as far as I can judge the very same materials which were formerly called *fillings* are now called *cement*, simply because it happens that they have an adhesive quality. Now the principal requisite of a cement is totally different from the requirements for a filling material, and it is time for some manufacturer to give us two preparations, one of which shall be for *filling teeth* and the other for *cementing crowns, bridges and porcelain fillings* into position. Just think what a glorious

thing it would be if we could have a cement with which we could put these fillings into position, which would be a liquid and which would have no powder in it! Is it impossible? What of Stratina; we see a plate broken in two and put together again with Stratina or some other of the liquid cements and no ordinary force will break that plate apart. Those materials cannot be used in the mouth because they take from twenty-four to thirty-six hours to harden, to set, and because they are not waterproof. But it ought to be within the limits of chemistry to give us a liquid cement, with little or no powder in it, for the cementing of these porcelain fillings, and when we get that we can indeed perhaps claim to have the ideal filling.

So much by way of comment, and I say as much as this because, curiously enough, a little article which Dr. Kingsley wrote in the ITEMS OF INTEREST has brought to him I suppose, two or three hundred letters from different parts of the country, asking for information on these various points. It has brought to me about three hundred letters, and I believe it has brought to the publishers of the magazine over a thousand letters, all of which indicates the interest that is taken throughout the country in the possibilities of this system.

There is perhaps nothing very new in the Jenkins system. The principal thing is that Dr. Jenkins has perfected many of the details which are familiar to all in connection with the old glass fillings; the chief advance being in the body itself.

The procedure is to take what might be called an **Forming
the Matrix.** impression of the cavity with rolled gold No. 30. That sounds very simple, but it is not only the most difficult part of the entire operation but I might say

it is the only difficult part and the part upon which the final success depends. If the matrix does not give a perfect *replica* of the edges of the cavity, it will fail. The cervical margins which are always so essential in a gold filling are equally essential in a porcelain filling, and they are more difficult, for the reason that it is desirable to have your matrix extend over the surface of the tooth, that is, not to end at the cavity margin, but to extend over and lap down upon the surface of the tooth. Naturally the nearer you get to the gum the more difficult it is to deal with that portion of the margin. The matrix must extend beyond the cavity, but it extends now at an oblique angle, or almost you might say, vertically, and unless the impression of the edge is exceedingly sharp you will run the risk of building the body higher at that point than it should be. This must be remembered, that in order to get the matrix perfect, the cavity must be so shaped that the gold may be removed without changing its form, and in order to accomplish that it is necessary in dealing with many cavities to

cut away quite liberally. If after cutting away all of the margins of the cavity that you feel warranted in doing, you should find that there are undercuts caused by the inroads of caries, it then becomes necessary to fill the tooth with phosphate cement; you cannot save time by simply filling the undercuts; the better way is to fill the whole tooth with phosphate cement and allow it to harden thoroughly and then to cut a cavity in which you can fashion a matrix which can be removed without alteration of shape. Subsequently of course when you come to set the filling this phosphate cement would be removed, and the undercuts serve to hold the new phosphate which retains the filling.

The cavity being prepared the essential feature
Treatment of Cavity Margins. is the treatment of the margins. The margins should not only be smooth, but they should be, if I may use such an expression, definite. I believe Dr. Jenkins

advocates finishing the margins with diamond points, but I think you can do well enough with very small and sharp gold finishing burrs. Where you can reach the margin with fine pouncing paper disks, I should advocate that; at any rate the margins should be smooth and rounded. By rounded I do not mean so beveled that there would be a thin edge of porcelain extending over it, but the sharp edge should be taken off, so that after fitting the matrix you can burnish it down against the edge without danger of cutting it through.

The next step is to form the matrix. This is
Forming the Matrix. done by taking a piece of foil of proper size, usually cut in an elliptical form, the corners removed. It is put lightly over the cavity and it is forced into the cavity lightly with spunk. It is then taken out and any extreme excess of gold is cut away. It is then replaced in the cavity and a small piece of spunk is placed in it, and another and another, the procedure being the same as when filling a tooth with soft gold; the cavity is simply packed tight with this spunk. The overlap of the gold matrix which may be standing up is wiped into position; that is to say the spunk which is in the cavity is held firmly down with a burnisher and another piece of spunk is taken in the tweezers and laid flat upon the external surface of the tooth by a wiping motion, so that when all the spunk is taken out the gold should lie smoothly in the cavity; perfectly along the cavity edges and smoothly on the outer surface wherever it overlaps. It has been advocated by some to smear the cavity with some emollient like vaseline; I have not done that nor found it necessary, because I think if you decide to fill with porcelain you might just as well cut away enough of the tooth to be able to get the matrix out, and if you do not feel warranted in doing that, you should fill the tooth with gold.

The matrix having been formed, Dr. Jenkins, mindful of the slightest details, furnishes us with a little celluloid box with a transparent celluloid cover; that is held right under the tooth and this matrix is what is called "teased out," that is it is tapped lightly until it dislodges itself; I say dislodges itself rather than that it is dislodged, but there is no better word for it than that it should be "teased" out, and as soon as it is perfectly loose in the cavity it is gently tipped out and dropped into that box; the box is then covered and that matrix in that box will not change its shape. The patient may be sent away with a temporary filling and your porcelain prepared at your leisure.

**Investing
the Matrix.**

When the time arrives to bake the porcelain a small platinum muffle is filled with powdered asbestos mixed with water to a paste. The upper surface of it should be fairly thin, milky; as some one suggested this afternoon, "condensed-milky." It should be thin enough so that the matrix when dropped in will sink down into the mixture. This is then placed in the furnace; the flame is then turned on and the heat is kept up until all the moisture has been driven out. Then we have the gold lying in the investment in exactly the same shape as it lay in the tooth and in a position where the shape cannot be altered.

**Fusing
the Body.**

Having chosen the appropriate color of body the powder is placed on a little slab, which is furnished.

We are also furnished with a drop tube and a bottle labeled "Absolute Alcohol;" the powder of the body

is mixed with absolute alcohol, and enough of it is placed in the matrix to fairly cover the bottom and sides. The muffle is then covered with a little cover which has a hole in it so that you can see in. This is placed in the furnace in a similar manner as before, and the heat is brought up gradually until all the fumes of the alcohol have been driven off. During the operation a blue flame will be observed coming out of the muffle; that is the alcohol burning off. As soon as the blue flame stops you are safe enough to gradually draw the muffle over the hole until it rests over the center of the flame; the heat is then made more and more intense until the body fuses. The first fusing of the body will lead you to believe that there is very much shrinkage. It is taken out and cools off very quickly, because it is such a small affair, and as soon as it is sufficiently cooled to add more body, that is done. In adding the second portion of body care should be observed to get it down upon the gold, that is, wherever the shrinkage has caused the body to draw away from the matrix the new body should be mixed thin enough to pass under it and go down against the bottom of the matrix. The second fusing should fill up the matrix so that you will feel satisfied that the body is in contact with the matrix throughout, and at

the third baking you can usually build up your filling to the shape desired. This last fusing will present very little if any shrinkage. There is no particular necessity for care in fusing, excepting the last one; that is, it is the final body which gives you the color; even if you have overheated some of the first lot, that will not alter the color of the last lot, which will cover it over and give you the desired color. In doing this work, whilst arranging the various preparations of the body in the matrix, care should always be taken not to allow any of it to overrun the margins, because of course it will bake, and make thin overlays of enamel, which must be broken off afterwards, and it will also deceive you as to the height to which the porcelain should be built.

Having baked the filling, the gold is peeled off the back. It is not always that the gold will peel off very readily; if the bottom of your cavity is rough the gold will be correspondingly more difficult to re-

move, but I have found a very easy method of removing the gold when it does adhere. I use a sharp small burr in the engine and run it lightly over the back of the filling, the gold coming away nicely. The next step is to take all the gloss off the under side; that must be done even with the thinnest kind of inlay. Where there is sufficient thickness to permit it, undercuts should be made so as to give as rough a surface as possible to permit a proper adhesion of the phosphate cement.

All being in readiness to set the filling, my method has been to mix the cement as thin as I dared to make it and have stability to the cement; that is

placed in the cavity and the filling is put into position and tapped into place quickly, the excess of phosphate oozing out. If this causes the filling to bulge from the cavity it should be removed immediately, and it should either be done over or more space for phosphate should be made, either by grinding the porcelain or by cutting away from the bottom of the cavity. When there is sufficient space for the phosphate to remain in the cavity, the filling is put in and tapped to place so that the cement oozes out all around it. If there is any reason to think the filling might become disturbed before the cement is thoroughly hardened, it should be tied in with a very narrow tape.

It may sometimes occur that the cavity may be so extensive that one would feel a hesitancy in putting in one of these fillings and expecting it to remain there unless something more than undercuts could be relied upon. In such cases I have put fillings in with pins in them. The method of putting in the pin is to produce a matrix in the way I have indicated, and after having fixed in your mind

**Filling with Pins
Baked in.**

so extensive that one would feel a hesitancy in putting in one of these fillings and expecting it to remain there unless something more than undercuts could

where it would be safe to put a pin in the tooth, the matrix is invested in the muffle and dried in the furnace, and then a very sharp pointed instrument is used to punch through the matrix at the point where you desire to put a pin; the investing material will not interfere with this, as it can readily be punctured. I then use a pin such as is used in ordinary porcelain teeth, pins in fact that I have taken from porcelain teeth. I crack up old teeth, take out the pins and always have a supply of them on hand. Take one of those pins, cut one end off and drop the other down so that the head alone rests upon the matrix, or if there is enough body let a little more than the head extend up; put one or two pins in, in this manner, and fuse the body around it in the usual way. Then you will have a filling in which there are two pins, and appropriate grooves must be cut in the cavity for the reception of these pins.

Now here is a valuable point about this body. It would be a very fortuitous circumstance to find that the pins were so placed as to be *exactly* where desired, and at *exactly* the proper angle to go into such a groove; you may determine in advance to cut a groove in a certain place and find that place so sensitive that you would prefer to have it elsewhere; this body is sufficiently dense to allow the pins to be bent in any direction without danger of fracturing the body.

In closing I would say that this work requires such skill, and such painstaking care to reach that standpoint which I consider represents the ideal of an American dentist, that unless you can be well paid for it, you cannot afford to do it.



The Lips and Their Pathology and Treatment.

By C. BUNTING COLSON, M.D., D.D.S., Charleston, S. C.

Read before the Georgia State Society at Lithia Springs, Ga., June, 1898.

For my subject I have chosen the lips and adjacent parts of the face about the mouth and the hands; the therapeutics and pathology of same, with treatment. The normal lips need no anatomical description here, yet the purely normal lip is by no means very common, as a very large percentage of lips of our American people are rarely normal, as the lips most frequently show the evidence of almost all the pathological conditions of the system.

The lips are the frame when the teeth become the picture, and let the picture be ever so beautiful, if poorly framed, it loses its harmony. It is not necessary for a lip to have the artist's idea of an ideal bow to be pleasing, if it presents that healthy tint, delicate hue and softness common to mucous tissue in the young. All healthy adults should have nearly the same, as the mucous membrane changes little with age, and if the lips are properly treated they should be just as bright and pink at fifty as at sixteen.

The chief causes of the various pathological conditions of the lips are the habit of biting and sucking them, causing unusual development of certain parts and chronically enlarging the vessels by biting and bruising, and the lack of care of protecting them from cold winds in our unnatural life of civilization.

Chapped Lips. Dentists need no description of them. All winter they are with us daily, and many appointments are postponed or sittings curtailed on their account.

But this to me now is a thing of the past. They have no more terror for me, and to those who do not know how to master them, I here bring a boon for their winter operating.

In the early spring morning there comes into your office a young and beautiful woman, "sweeter eighteen," as some modern poet has put it, all beautiful and fresh as spring itself; appointments such as hair, nails and complexion, dress and half-hidden lingerie perfect. She takes her seat in your chair for you to examine that erupting "wisdom tooth," but you cannot get there. At the first stretch she recoils and you let go, to see the blood burst through a crevice in her lip; you examine and find them like serrated parchment. She knows the art of keeping her hair light and fluffy and sweet, and the art of manicuring, and how to

make up and to wear her beautiful spring clothes, and perhaps of keeping her teeth clean, through your previous counsel, but the art of keeping her lips healthy she knows not of. I have been told (I know not of it from personal experience) that kissing such a girl in the dark, hands down, is like kissing a potato grater, and I cannot but think that my informer was right.

Split Lip. Here is another pathological condition we frequently meet, which makes operating difficult.

This condition is almost invariably caused by some habit of sucking the lip and causing some unnatural development of one side, or both, and causing a fold either in the center or on the side near the corner; more often found in the male, and hardest to cure in the smoker; the inflammatory condition is most positively parasitical.

Fever Blisters. This acute inflammatory condition characterized by the development of a group or more of vesicles on a patch of inflamed mucous membrane, or on the skin near the mouth, is to my mind also purely parasitical, although frequently appearing after some digestive derangement or febrile condition; but this simply means the favorable condition for the development of the ever-present spore waiting its chance.

We have elderly patients, and sometimes children of the slums, come to us with the chronic sore or inflammation of the corners of the mouth. Usually the old ladies have a plate and it is very poorly cleansed, but the true cause is the drooping corners of the mouth, when the saliva, gravitating to the corners, escapes slightly and causes the inflammation. In the children poor general hygiene and the dribbling habit most commonly cause this condition. It is also a parasitical complication, because you cannot cure it without good germicidal and antiseptic treatment.

Treatment of the Lips. In the treatment of the above ailments that I venture to present to you, are ideas well matured. How should the healthy lip be treated to keep it so during the several changes from moist and warm to dry and cold, that is so severe on all exposed tissues of the body, and especially the lips, as they are of such delicate texture?

The mucous membrane of the lips need protection against these thermal changes, and that which is placed on them must be compatible with their functions and conditions. For this purpose a standard formula has been used for many years, but with poor results. I refer to cold cream. What is cold cream? Oil of almond, spermaceti, white wax and rose water. Here we have on an excretory mucous surface, frequently flushed with mucous and water, an ointment incompatible with moisture

or mucous. Its action is only temporary, mechanical, and has positively no therapeutical effect. A mucous surface will not absorb or retain either a vegetable or animal oil, and cold cream only remains by common adhesion for a short time, and then leaves the surface exposed, having accomplished nothing except the temporary mechanical covering.

The only thing that I have found in the entire pharmacopœa that will combine with the mucous tissue and the skin, and not impair function, is glycerine. Not simply glycerine, and not without certain precautions and directions.

Glycerine and Rose Water. Glycerine is not an oil, and pure glycerine is one of the best-known emollients. The common article found in ordinary drug stores is positively irritating to the human skin, and is also slightly caustic.

Therefore in making the following preparation, precaution as to purity should be observed to get satisfactory results. Take of pure glycerine, one ounce; rose water, one ounce; place in three ounce bottle and agitate for several minutes and then set aside for several hours or over night, so that the glycerine will take up the water and destroy any anhydrous or caustic property it may have.

Now, if the lips or skin about the mouth, chin or nose are to be protected, moisten the parts with warm water and dry same by sopping with a soft towel, without wiping or friction, and instantly apply freely the glycerine and rose water mixture with fingers. This done once a day on retiring, or to those peculiarly predisposed to chap, twice a day may be necessary, is positively a preventive, and will hasten the recovery of an already troublesome case.

In a case where lips are badly broken and bleeding, and the hands roughened and cracked, we find here the under skin in a high state of hyperemia. It is not well to leave this alone, for if your glycerine is not the purest and the tissues not well saturated with water, it will cause pain on the application and increased redness. It has been the most common and rational treatment to use witch hazel, but I have since used a preparation for this condition that I wish to call to your special attention, as its effect is charming and wonderful in restoring the hyperemic condition to normal, instantly stopping all pain in the parts, and by no means incompatible with the glycerine and rose water that may be applied a few moments after. This preparation is known as resinol. I have been familiar with it for several years, and the more experience I have with it, the more infatuated I become with its excellence.

Resinol. Resinol is only its proprietary name. It is not a quack preparation. It has for its combination the wonderful oil of cade, the active principle of the

juniprunus oxycedus, the oil of juniper, lanolin and petrolatum and a synthetical derivative of those wonderful coal tar preparations. I have never been able to find its equal in dissipating capillary congestion, and as a local application for all such pathological conditions, it is my *ne plus ultra*. It has wonderful power to subdue localized pyrexias. For instance, in that turgid fold of tissue over a wisdom tooth, that no balm yet known to me will subdue under hours of treatment, this little salve will calm, subdue and reduce in an extremely short time.

In the very worst case of chapped lips, rub resinol well over them and go ahead and operate. Your patient will have no distress, be the operation ever so long and extensive, and the next time she appears those lips will be as soft and pliable as an infant's.

The next cases that worry us are the fever blisters or cold sores. Not so much in the early stages, when they only sting when touched, but when they are healing and form scabs that crack and bleed and are very painful. Since resinol has come to my knowledge these cases worry me no more. I apply the ointment before touching the teeth, and it is wonderful what an amount of stretching and handling those lips will endure, and what is still more startling, is to find those lips two days after almost normal and no signs of inflammation. Fever blisters on my own lips I often abort when fresh by using on them on first discovery, hydrogen dioxide and then touching with resinol, which, as I have said before, has a most wonderful power of reducing subdermal inflammation of a local character.

**Soap for
Dentists' Hands.** A busy dentist washes his hands scores of times a day, using soap as he should almost every time. How important it is to keep our hands soft and free from cracking, and this can only be done by using a proper soap. The brands in soap are too numerous to mention. Some of the most popular and freely advertised are the greatest frauds, and have almost as much free alkali as soft soap of war times, or common washing soap. The best soap I can find for a dentist to use, is the white rose glycerine No. 4711, made at Cologne.

This charming soap has a minimum of alkali free, and will prevent chap in ordinary circumstances, and with the aid of the glycerine and rose water, used at night on retiring, will resist chap under almost any condition and keeps the hands soft and pliable. It is also economical, as it never splits, and washes to a wafer, and does not discolor the water in the basin, and has an acceptable scent that will disguise the foul odors that we meet with in mouths. The hands washed with that soap always seem pleasant and clean to a patient.

Formaldehyde in Dentistry.

By DR. J. H. HANNING, Brooklyn, N. Y.

Read before the Second District Dental Society at Newburgh, October, 1898.

My experience leads me to believe that formaldehyde is a most important addition to our list of medicaments. I have found it is especially indicated in blind abscess and where great tenderness and pain result from pericementitis. Where I have been unable to seal in other antiseptics formaldehyde has been tolerated and patient reported comfort. I find it seldom necessary to make more than one application.

My method is to gain as free access as possible

Blind Abscess. to root canals at first sitting. Open as far as possible, generally using sulphuric acid 50 per cent., but sometimes Ivory's root canal reamers. Follow with hydrozone in S. S. White minim Syringe No. 29 and dry as thoroughly as possible. Wind a small piece of cotton on a canal dresser, saturate with formaldehyde, place in each canal and seal with gutta percha stopping.

Dismiss patient for a week or ten days. If tooth is comfortable at end of this time I fill roots with a paste composed of thymol, dried alum and glycerole equal parts, with enough oxide of zinc added to make a stiff paste. This can be worked into the canals much easier than cement, will become hard, but, if necessary, can be removed with a warm broach. I am seldom compelled to remove sealing because of discomfort.

Formaldehyde is volatile and acts by diffusion. It will not stain dentine and may be used in any tooth. The odor and taste are strongly pungent, not noticeable at first, but becoming most decided after a few seconds. It is well to instruct the patient to breath through the nose while application is being made. Should any drop on the tongue, cheeks or lips, swab with cotton dipped in grain alcohol. This will allay the burning sensation.

When applied in quantity to the skin a feeling of numbness results and a slight shriveling, as when the hands are immersed for a time in warm water. Sometimes the epidermis is lost after a period of nine or ten days.

I have read somewhere that formaldehyde is valuable as a pulp devitalizer and that it is unnecessary to cleanse the canals. That the crown filling may be completed without further treatment, as the pulp is rendered aseptic.

**Sterilizing Dentine
Over Live Pulps.**

My opinion is that the pulp-mass will not *remain* aseptic; that the contents of canals should be removed and canals filled as completely as possible.

In my hands the application of formaldehyde to a live pulp or to sterilize softened dentine over a live pulp will cause excruciating pain, and it becomes necessary to destroy that pulp with arsenic to quiet its protests. I have never been able to make an application for sterilizing purposes to any cavity in a live tooth where the pulp was nearly exposed without causing pain.

Fistulas. From one to three drops placed with a minim syringe will cause granulation in alveolar fistula. This treatment given at the time of root dressings will hasten a cure, generally making short work of abscess with fistulous opening on gum.

Dentifrices. Several formulas for tooth powder and mouth washes have been prepared, but I am unable to obtain them.

As the odor and taste are pungent, I believe a powder or wash would be unpleasant to use. Also, that both would be unstable, as formaldehyde is volatile.





Central Dental Association of Northern New Jersey.

October Meeting—Discussion of Dr. Ottolengui's Paper.

Dr. Joseph Head. I was very much interested in what Dr. Ottolengui said and much pleased at his able presentation of this system, which seems to me in many respects to have novel features. Before he presented the subject I was under the impression that any matrix made in any cavity and then used as a mould for porcelain, would, in one burnishing, be sure to get out of shape by the contraction of the porcelain. Dr. Ottolengui has explained how this may be partially remedied by using an investment. But would not that porcelain when contracting have far greater adhesion to the gold than the asbestos investment, and if the porcelain did contract what could possibly prevent the matrix from being drawn out of shape? If such is the case it would only go to prove what all of my friends who have done this porcelain work have heretofore avowed, that no matrix can be kept in perfect shape with a single burnishing. But when the floor of the matrix has been covered with porcelain it should be replaced in the cavity and then made stable by means of the porcelain, the matrix can a second time be burnished down so that perfect results may be obtained.

Another point is this: We all, I think, find that crowns, the margins of which are not nearly as perfect as the average porcelain filling, last several years, even as much as twenty years; even with a fairly good edge the acids of the mouth remove the cement, leaving crevices which allow the entrance of material which remains and serves as an effective block against further wear for years. There are porcelain fillings in Philadelphia which have done good service for six or eight years, and I see no reason why that service should not be continued for six or eight years more.

Dr. Stockton. For a great many years I have been very familiar, not especially with inlay work, but with porcelain work, and I think there would be but very little difficulty for me to pick up the inlay work if I were so disposed. It is cer-

tainly a very great advantage to have what the doctor has termed an ideal filling. We all know with what horror it strikes our sense of the beautiful to see not only the large gold fillings that greet our eyes, but gold crowns on anterior teeth. If the time should come when public opinion could be educated up to the idea that such is not the thing to do, then this porcelain inlay will be a great thing.

I have had some experience with porcelain inlay
Dr. Osmun. work, and I see nothing new in the description of Dr.

Ottolengui beyond an accentuation of the care to be observed in the details of the operation. I had some experience with the glass of Herbst, and found, as I presume all did, that there was a change in the color, but I have been wonderfully surprised at the length of time those inlays last. They were done in those cases very imperfectly, not having had very much experience, and they were put in places where I considered the tooth not fit to fill with gold, being too soft in texture, and, as I say, they have lasted wonderfully well. I had occasion yesterday to see one of the first I put in, and its color is like that of Joseph's coat, for I think there are about a dozen different shades in that one inlay. I have put in quite a number of that style of inlay where you take mandrills and make a round cavity and grind the inlay until it fits perfectly and cement it in and then grind it down. Of course the color is not perfect, but they have lasted a long time. I have in mind two or three cases where I put them in, and they have done marvelously well. Then I suppose all of us have undertaken to grind bits of porcelain teeth and fit them in the best way we could; we do not make very excellent joints, but we do the best we can under the circumstances. I have in mind a lady who will not have anything but porcelain fillings in any of her teeth. Dr. Beale, of Philadelphia, put in two fillings for this lady, who has been under my care for some ten years, and they were ground from teeth with the pin left in, and with the exception of having to cement them underneath once in a while where the pins go, those fillings have been in active service for ten years and have never been out except to be recemented. She told me she had them because they were more artistic; that she made Dr. Beale put them in, and would not have anything else. She wanted me to put one in, but I said it would not last; that it would have to be done over again in a few months; but she told me to do the best I could and it would be satisfactory, and, strange to say, they are standing extremely well. When we come to do this work, if we take but half the pains that Dr. Ottolengui speaks of we shall be both surprised and gratified with the result obtained.

Dr. Smith. of Baltimore, a brother of Dr. Holly
The President. Smith, is with us, and we should greatly like to hear from him.

Dr. Smith. On behalf of my brother I thank you, for I know it is his name which has called forth the invitation; but I feel like Mark Twain, who, whenever he speaks is expected to make fun, and I feel that I cannot take my brother's place in that respect.

I believe the American people are beginning to feel very much like the Europeans with regard to gold fillings, and I find in my practice that they are objecting more and more to the appearance of gold in the mouth, due, I think, possibly to the fact that it is getting to be such a common thing, and those of us at least who have the better class of people to deal with must find some other means of preserving the teeth. I believe one of the greatest uses of this material, if it is what it seems to be, has been overlooked, and that is in making window crowns; that is, gold crowns cut out and metal windows put in and then porcelain placed in front. I believe it would be very useful in that style of work. I shall look forward very anxiously to the time when this material is put into our hands, and I propose to do my very best with it.

Dr. Luckey. I have had no experience personally with porcelain filling, but an interesting experience came to my hands last week in taking out a tooth from a lady's mouth, one of the last teeth left. This was a tooth restored about twenty years ago by Dr. Meeker. The lower half of an upper left bicuspide had been broken off, and he had built it out with porcelain. I found a space at the joint wide enough to put in probably two thicknesses of thin writing paper, and it had evidently been in that condition for many years. The strangest part of it all was that the lower edge was as perfect and free from decay as any part of the tooth; there was positively no evidence of disintegration or breaking down at all, and still there was nothing to prevent débris from lodging between the porcelain and the dentine. Whether or not conditions in that mouth were such as to prevent decay I cannot say.

The only objection that I could make to porcelain inlays, so far as I understand the subject, would be concerning the change of color in the tooth itself; we might put in an inlay which today would be a perfect match, but the probabilities are that within five or ten years the tooth itself would have darkened in color, and the inlay would have remained the same, so that if the tooth was good for a number of years the work would need to be changed in order to keep up the semblance to nature.

Dr. Meeker. My experience in inlay work has been only of two kinds, one when Dr. Timme brought out his glass fillings; I do not know whether it was Herbst's prep-

aration or not, but I bought a case of it and commenced to work with it. Of course every American dentist knows how to do everything, and I knew how to handle these porcelain fillings at once! In every cavity where I placed one of these fillings I eventually put gold, for they almost invariably came out; so I did not try very many of them. Then the S. S. White & Company brought out some baken enamels, in pieces in different shapes, squares, curves and ovals, and I put quite a number of those in the lower molars and some in the labial surfaces of the incisors, and I have seen some that have been in service ten years which are doing very well today. I noticed in the incisors that the cement around the edges came out; but a little more can readily be put in, and they look all right. I recognize the objection that Dr. Luckey has spoken about, concerning the change of color in the teeth; but that takes quite a long time, and as people grow older and the wrinkles come I do not think they take much notice of it.

A few years ago I had a little experience with in-

Dr. Watkins. lays after Dr. Timme taught us to use inlays of glass, but my experience was very much like that of

Dr. Meeker, and I discarded their use. But I have seen a case recently which may be interesting, now that we have been taught how to use inlays in the proper way. This was a lady who came from Philadelphia; she was in the hands of Dr. Harrower. She had two lateral incisors which were badly broken down, and he used glass or porcelain, or some kind of inlay, I do not know whose method it was, but the color remained very good, and they were put in about ten years ago. During the last two months they have both come off and I have re-cemented them on. But they did good service and looked as well or better than gold; she had a great objection to gold in her mouth, and wanted to go back to Philadelphia to have them replaced when they came out, and was delighted to find I could put them on.

The only important point raised was that sug-

Dr. Ottolengui. gested by Dr. Head concerning the altering of the shape of the matrix. I think I explained that the matrix must not only come up to the edge of the cavity, but extend over it on the unbroken surface of the tooth. Now what is the result? We have a piece of gold that practically has been depressed in the center, and the margin of that depression is an acute angle, almost a right angle, and that more or less circular in shape. That gives the matrix great strength in resisting contraction. The only manner by which it could be contracted would be by the body adhering to the margin, and in contracting drawing the margins together, and of course distending in some other direction, because you cannot compress one portion without bulging at some other

point. But that does not act in this manner; the porcelain is not adhering to the gold; the gold has a highly polished surface and the porcelain does not adhere to it, it merely conforms to it. The first mass of body which is put in may attach itself over one margin and in contracting it will contract away from the other margin; it does not spread out and cover the whole floor of the cavity and then contract; it has a tendency at first to draw away from the margins. The first mass put in may not reach any of the margins at all, and then that mass having already contracted, the second portion of the body that is put in does not contract enough to alter the shape, and the last lot, which is the first lot to come in contact with the margins at all, does not contract sufficiently to alter the shape of the whole mass, and therefore shrinkage does not affect the fit. In fact, I venture to say that I will undertake to make a filling without any investment at all, and produce an accurate adaptation of the filling.

New Jersey State Dental Society.

Twenty-Eighth Annual Meeting—Report of the Materia Medica Committee, 1898.

Mr. President and Gentlemen.

Your Committee, for various reasons, could not do that justice to the subject to which the Society is entitled, therefore this brief report will kindly be accepted as noticing only a few of the newer remedies which have come under the notice of the said Committee in the last few months.

The Materia Medica Committee of this Society **Formalin.** in 1896 paid a slight tribute to formalin as an antiseptic and with this opinion the present committee can fully coincide. The antiseptic qualities of the drug are all that could be desired, and in the treatment of diseases in the oral cavity where such a medicament is necessary it can be recommended as highly efficacious. Putrescent pulps are rendered odorless by merely placing a drop of the 2 per cent. solution in the canal for a day or two.

Lysol. Lysol is a product of coal tar, and experiments have shown that it is four or five times more powerful than carbolic acid in its antiseptic power. It has been used more or less extensively by the dental profession during the last few months with excellent results.

Silver Salts. Under the head of antiseptic treatment the lactate of silver may be mentioned as a most useful remedy in alveolar abscesses in destroying bacterial life in putrescent pulps. When injected into old sinuses of alveolar abscesses very happy results will generally follow its use.

Agathin. Agathin given in slight doses is an excellent remedy in facial neuralgia, which is sometimes caused by dental irritation. It has been found to give good results in the treatment of ticdouleureux in the first stages of the disease in doses of from 2 to 8 grs.

Pyrozone. Too much cannot be said of pyrozone 25 per cent. solution in the treatment of abscesses, as it is often successful after every other medicament has failed, the solution being pumped into the abscess by way of the canal until it shows itself through the fistula. It is also of value in bleaching badly discolored teeth, as set forth in a previous paper by a prominent member of this Society.

Creosote Carbonate. Creosote carbonate can be substituted for all uses where creosote has previously been employed, the carbonate having the same beneficial effect, and being at the same time inodorous, which property will at once present itself as a great advantage to the dental practitioner.

Aceton and Acetone. The use of aceton after long operations when patients suffer with headache is recommended, also the use of acetone for both patient and operator as a remedy for nervousness after prolonged and tedious operations. It is employed as a nervine in doses of 5 to 15 minims in water.

Alkalithia. In pyorrhœa alveolaris where uric acid is present in the system, alkalithia is one of the very best known remedies and has been recommended by some of the best known practitioners in this country. The dose is one teaspoonful in a tumbler of water three or four times a day.

Todo Formagen Cement Your committee has been requested to mention Iodo formagen cement, and begs to state that they have used it in several cases of nearly exposed pulps, with indifferent results, and they are of opinion that we have other and older remedies just as good and perhaps better for that operation. One

very objectionable quality of this cement is its *adhesiveness* to the dental instruments. It is claimed that it can be used in all cases except periostitis, which includes the capping of exposed pulps, but your committee is of opinion that no mode of operation will *permanently save* an exposed pulp under a filling.

Where iodoform is used to any great extent and

Carvacrol Iodide. the odor is objectionable, an excellent substitute will be found in carvacrol iodide, the germ destroying qualities of which will be found far superior to those of the first named drug.

Xeroform. Xeroform is also a good substitute for iodoform as it is non-poisonous, odorless, powerful in its action upon bacteria, and does not cause eczema.

Euclidean Hydrochlorate. Euclidean hydrochlorate is rapidly coming into general use, on account of some of the following advantages claimed for it:

1st. Superiority in anæsthetic property and extended duration of anæsthesia.

2d. May be used without danger in large quantities and with absence of any toxic effect upon the heart and circulation. It is said upon the highest authority that it is five times less toxic than cocaine. Your committee have used it to some extent in their own practice, although not very extensively, and have been much pleased with the result.

The anæsthetic properties are more prolonged than with cocaine, and the bad effects of that drug are nearly or wholly done away with. A two per cent. solution has generally been used (prepared by Schering & Glatz) and has been found adequate for all practical purposes.

Painful dentition can be relieved by frequently washing out the mouth and rubbing the gums with the following preparation, which has proven very beneficial in several cases:

Euclidean hydrochlorate	2 grs.
Chloroform	15 minims.
Glycerine	6 drams.
Extract rosae	5 drops.

Finally your committee deprecates the careless

"Cocaine." use of cocaine, although, in its proper place in the dental *materia medica*, it is one of the most useful and excellent remedies and one that we would not care to discard. The use, or rather the abuse of the drug especially in "secret preparations" should, however, be so discouraged by the dental profession that in a short time every such preparation would be entirely obliterated from the American dental office—if possible, also, it would be desirable to so regu-

late the dental laws as to entirely prohibit the sale of such preparations or to make it a penal offense to either *use or sell them*.

Respectfully submitted,

W. E. LITTLE,
J. A. WAAS.

Report of Clinic Committee.

Matrices. Dr. John I. Hart gave a practical demonstration of the method of making and adjusting a steel matrix, which was made of strips of steel that is used for corset stays.

The credit of the origin of the method was given by Dr. Hart to Dr. J. P. Hodson, of New York.

The advantages were the quickness and accuracy of adaptation, and the securing of perfect contour.

Bridgework. Dr. Joseph Head exhibited his remarkable cantilever bridge that was especially recommended when the lower wisdom, twelfth and sixth year molars are missing on one side only.

The novel feature consisted of a double clamp which, by preventing lateral motion, obviated the necessity of extending the plate around the front teeth to the opposite side of the mouth.

Dr. Cruzen exhibited an electric root canal dryer.

Canal-Dryer. To use it, insert the double end of instrument into handle (end nearest button), connect cord to other end of handle and then to battery; when it is ready for use, the point can be bent to any angle by bending over any round instrument (shank of excavator). Insert point in canal and press button, releasing the finger the instant patient feels the heat uncomfortably. If too much current is used, the instrument gets quite hot and is apt to cause pain. This is avoided by releasing pressure on button.

Scaling Teeth. Dr. L. Ashley Faught explained his method of scaling teeth. The clinician believes that insufficient attention is given to this matter and that the proper scaling of teeth is very important. He considers one of the causes of its neglect to be the fact that except in very bad cases, the annoyance to the patient by reason of wounding the gums, is so great as to lead to its omission. He exhibited a special set of scalers, four in number, with the blades at an angle of forty-five and ninety degrees, two at each angle, so

as to afford both pull and push motion. The blades were long and tapering, giving very much the impression of an exploring instrument. He had used them about a year and found their temper most excellent, which is an important feature of course in their construction. He finds their use most painless for light scaling and for a second scaling where the heavy incrustations have been removed by heavier scalers at a previous sitting.

Splint for Loose Teeth. In many instances it is necessary, to retain, temporarily or permanently, loose teeth by mechanical means, until Nature has been able to restore the surrounding tissues to a healthy condition.

Dr. F. L. Fosheim without discussing the preliminary treatment of the various diseased conditions demonstrated mechanical appliances used by him in such cases.

These appliances must be hygienic and non-irritating to the gums, lips, tongue, etc., and strict attention paid to the occlusion. When these facts are borne in mind and properly executed, the results will be satisfactory.

The method is as follows: Ligate the teeth if they are very loose; polish the grinding or cutting surfaces with stones or disks, make a groove $1/32$ of an inch thick from one approximal surface to the other in small teeth, such as lower centrals. Cut out a pit $1/20$ of an inch deep near approximal edge to avoid the pulp. In large teeth two pits may be necessary.

In the groove a thin piece of sheet platinum 38 or 40 gauge is to be burnished. When this is fitted properly, punch a hole through the platinum immediately over the pits; fit irridio-platinum wire (20 gauge) into the pits, through the holes in the platinum and solder in place.

When all the loose teeth are thus prepared, and the little concave platinum pieces with the pins are properly in place, take an impression in plaster, and if the platinum pieces were not removed in the impression, put them in their places upon it; varnish impression and pour in plaster and pumice stone. When the case is separated it will be found that all the little platinum pieces are in their respective positions on the teeth; they are now soldered together and made as thick as required. When this has been done, file, polish and cement in place with thick cement.

Orthodontia. Dr. A. Irwin explained his treatment of a case of irregularity. Thirteen teeth involved; seven in the upper and six in the lower maxilla.

Four teeth extracted. Nine teeth drawn into position and correct articulation established. Protrusion of the lower teeth and consequent facial disfigurement prevented.

Patient a boy thirteen years old. Large teeth, small jaw. Expansion of jaw contra-indicated. Cuspids partially erupted. Second molars partially erupted only. Right upper and lower first bicuspids, and left upper and lower lateral incisors extracted. Superior and right lateral incisors and cuspids drawn into position. Inferior and right lateral incisors and right cuspids also drawn in line.

Used a gilded piano wire bow fitted into gold tubes soldered to gold caps cemented into position on upper first molars. Waxed floss silk to tie upper central incisors to bow, which, by virtue of its elasticity, drew the centrals outside of the inferior incisors. French rubber tubing to draw unlocked right superior lateral incisor out into line.

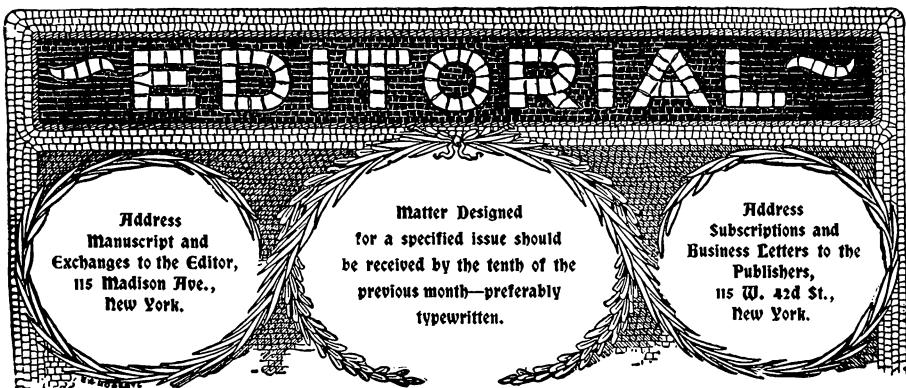
Howe screw post gilded to draw right superior cuspid back into the position originally occupied by the upper first bicuspid. Nut filed square so that it could be turned by a common steel watch key. Opposite end secured by loop and hoop into molar caps. Similar appliance used to draw the right inferior cuspid back into the position originally occupied by the lower first bicuspid.

Patient carried watch key and turned nut himself.

Time actually consumed in regulating the teeth, four months.

Election of Officers.

The election of officers resulted as follows: President, J. Allen Osmun, Newark, N. J.; vice-president, William E. Truex, Freehold, N. J.; secretary, Charles A. Meeker, Newark, N. J.; treasurer, Henry A. Hull, New Brunswick, N. J. Executive Committee—Oscar Adelberg, Elizabeth, N. J.; F. G. Gregory, Newark, N. J.; F. Edsall Riley, Newark, N. J.; R. M. Sanger, East Orange, N. J. Membership Committee—F. L. Hindle, New Brunswick, N. J.; William L. Fish, Newark, N. J.; C. S. Hardy, Summit, N. J.; C. W. F. Hoblitzell, Jersey City, N. J.; William H. Pruden, Paterson, N. J. For recommendation to Governor for member of State Board—F. S. Barlow, Jersey City, N. J. On motion of Dr. Hindle, Dr. L. Ashley Faught, of Philadelphia, was unanimously elected an honorary member of this Society. Dr. Faught returned his thanks in a few well chosen words, expressing his appreciation of the action just taken.



An Invitation to All.

With this is begun the third volume of *ITEMS OF INTEREST* since it became a magazine of original record. Did we care to imitate the example of the great metropolitan dailies we might formulate a motto; we might say: "Formerly we clipped from others; now others clip from us." But we prefer not to continually print such a statement, as it might seem an invidious comparison with the other dental publications, with all of whom we hope to remain on the most friendly terms. We may, however, be pardoned for just once calling attention to the truth and appropriateness of the epigrammatic statement of our progress. For we are proud, and we think justly so, of having within two years not only distanced all other magazines in circulation, but of having become the chosen medium of the dental writers who may desire immediate publication, rather than to await the slower method of presenting their views through a dental society. In our last issue we gave a detailed statement of the original matter, specially prepared for *ITEMS OF INTEREST*, which had been offered to the profession through these pages during the past two years. We might have tabulated the matter of similar character which had been published by the other dental magazines and by such comparison have called attention to the striking contrast, but it seemed discourteous to do this; those interested in knowing the facts may easily learn them.

While therefore we have accomplished much, more indeed than the most sanguine expectations of two years ago, still the ultimate goal has

not yet been reached. We have published, and shall continue to publish, the best thoughts of the American writers, but we wish our pages to be more universally used. A number of papers of practical value, it is true, have already been accepted by us which, unsolicited, had come from distant quarters of the earth. We desire papers from all parts of the world. We shall not be satisfied until the monthly issues of ITEMS OF INTEREST shall be recognized as reporting the latest achievements in dentistry throughout the world. We aim to be international in the widest sense of the word.

It is understood to be the policy of at least one of our leading journals, that only American dentists may contribute to its pages. The American may perhaps have his residence abroad, but he must be American. We take a broader view. We believe that the American dentists collectively are the best in the world. Dentistry, in truth, was elevated into a profession in this country. The first dental colleges originated here, and ninety per cent. of the dental literature extant was written by Americans. Nevertheless, there are many brilliant thinkers in other lands, and these men often originate practical methods of great value. It is in the interest of our science that such men should widely and promptly publish what they have originated. We invite them to do so through our pages.

At one of the recent annual meetings of the Canadian Economic Entomologists, the president in his address pointed out that though there might be boundary lines which divide the territory of the United States from that of Canada, in the pursuit of the study of entomological science no dividing lines could be recognized, since none exist; that the vast sums expended annually by the United States in the entomological work of the Department of Agriculture had brought results as valuable to the Canadian as to the American farmer. This is true. Science is universal and knows no geographical limits. Therefore, while forever upholding the dignity of American dentistry, and admiring the achievements of American dentists, we invite the whole dental world, at home and abroad, to lend us their assistance, by sending us their latest discoveries, inventions, or theories. In return we promise prompt publication, elaborate illustration, and world-wide circulation.



The New Year is supposed to be the time for promising ourselves to remodel our modes of living. It is fitting then to begin this department for the incoming year with a discussion of a point of ethics raised by a correspondent, who forwards the following communication:

"What is to become of our profession?"

A Nice Question of Ethics.

"The above question keeps presenting itself to me as I almost daily have to deal with the patients of others. Being newly located in this little city of thirty thousand inhabitants, I, of course, have my reputation to make among the patients of others, and being a new and strange man every layman that has a grievance comes to consult me because, being a stranger, there is little possibility of my learning the name of his old dentist. This is done in many cases where the grievance is in the imagination only and not in the quality of work, but these are not the cases of which I wish to speak, for a word will send such patients back to their regular dentist in a much better frame of mind. But there are other cases that come to my notice all too frequently where the patient has just cause for complaint. The following will illustrate:

"Mrs. X. Age 45. Presented for an examination which revealed a fistula on the gum over a superior molar that was wearing a good-looking gold crown. Her dentist had assured her that it would eventually heal if she would only be patient and endure the inconvenience and pain a while longer. She has waited for seven months, with this fistula discharging all the time. Removal of crown showed that the canals had never been filled, but a piece of cotton had been stuffed in the pulp cavity.

"Mr. Z. Age 41. A preacher by profession. Presented for an examination which revealed a fistula over the superior lateral and superior

cuspid, both of which were discharging freely and very offensive. Both teeth had fillings in them, the lateral cement and the cuspid amalgam. Removal of fillings showed that both reached the pulp cavities and no root fillings. Patient says that the fistulas were there when the teeth were filled, and that the dentist had told him that they would heal if left alone. All he needed to do was to wait patiently. He has waited two years with the fistulas discharging continually, but recently they became so offensive that he could endure it no longer. But he has waited too long, as he now has necrosis.

"These are only samples of many cases. The dentists are not advertising men at all, but stand well here both in the profession and among the laity, especially the latter.

"I am a '98 man, so unavoidably new. I wish to know what my relation should be to these professional brothers."

This young man seems to have exceeded the demands of fraternal duty. There is no just law which demands that a man should drive business away from himself, even though he be a dentist. If the patient of another man should pass under our observation by accident, as when accompanying one of our own patients on a professional visit, both ethics and common justice demands that we should make no remarks deprecatory of our professional brother, nor should we try to win the patient by alienating him from his regular attendant. Or, should another practitioner entrust his patient to our care for some special service, we should be scrupulous not to undertake any work other than that specified. Our fellow dentist has displayed his confidence in our integrity by entrusting his patient to us, and has paid a compliment besides, tacitly admitting that in the particular case ours would be the better service. It would be a poor return to deliberately alienate the patient.

But where the patient voluntarily solicits our service there is no reason whatever for withholding it, nor for advising a return to a dentist in whom it is evident that he has lost faith since he seeks advice elsewhere. The dentist is as much in business as the shop-keeper, in a sense, and there is no reason why he should turn away voluntary patronage.

It is well, however, to refrain as far as possible from criticising the work of others. Aside from the duty to be charitable towards the faults of others, we do not always know the circumstances under which the work has been done, nor indeed how much of the patient's tale may be believed. But this rule of charity need not be extended so far as to shield those who are guilty of malpractice, as appears to have been true in both cases cited. Our first duty is to the patient. We should be ready always to give our own best service, and this at times includes warning against incompetency. In such matters, however, ripe judgment may be required to avoid error.

Pressure
Anesthesia
Practically Applied.

How appropriate it is that to William James Morton, M. D., should be credited the distinction of suggesting the latest method of treating sensitive dentine.

Dr. Wm. T. G. Morton, the father of Anesthesia, the discoverer of the greatest boon to suffering humanity the world has ever known in the practical application of the blessings of anesthesia by the first use of the vapor of sulphuric ether on Sept. 30, 1846, was the father of the present Wm. James Morton who, at our Mountain Meeting in 1897 presented the suggestion which later appeared in his able work "Cataphoresis," page 217, where he writes as follows:

"It has become a well established practice in dental surgery to introduce into the cavity of a tooth for the purpose of bleaching it, when the cavity admits of it, a twenty-five or other convenient per cent. of peroxide of hydrogen held on a plegget of cotton and sealed in. It is maintained that, in addition to the simple process of imbibition, the peroxide is forced into the substance of the dentine by pressure due to the evaporation of the ether. In this manner teeth can be successfully bleached to an extent not possible if the plegget of cotton holding the bleaching fluid is not sealed in, except when electricity is used.

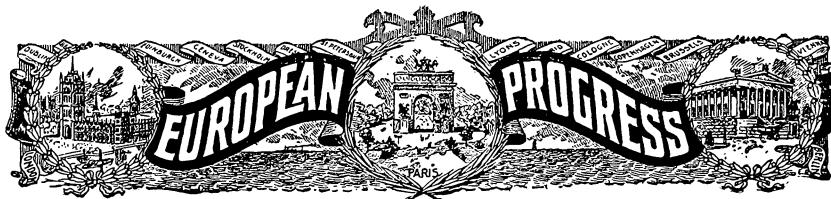
"It occurred to me that if this same principle could be applied to a sulphuric ether solution of cocaine that we should possess an extraordinarily simple method of anesthetizing the soft tissues in general and sensitive dentine in particular—a method so simple and sure that it would sweep away all the labor that has been expended in a certain class of cavities, upon the introduction of cocaine by electricity."

Potassocaine
the New
Obtundent.

The suggestion of Dr. Morton was seriously taken up by the President of the Consolidated Dental Manufacturing Company, who sought to give practical application to the idea, and make it commercially available to the profession.

Clyde Payne, D. D. S., of San Francisco, who placed an obtundent at the disposal of the profession through the California State Dental Society in 1897, suggested that in following the idea of Dr. Morton, which contemplates the use of the volatility of ether in forcing cocaine to the sensitive nerve fibrils, the obtunding effect would be greatly enhanced by the addition of caustic potash to the etherial solution of cocaine.

The aid of the only manufacturers of cocaine, and one of the oldest and most reliable chemical houses in the country, was sought in preparing a proper and convenient form in which to present this obtundent to the practitioner. This house, Messrs. Schieffelin & Co., of New York, will specially prepare "Potassocaine" for the Consolidated Dental Manufacturing Company, who now offer it as advertising pages indicate.



Pain After Extraction of Teeth.

By MUDR. ARTHUR SCHEUER, Zahnarzt, Teplitz.

From Prager Med. Wochenschrift, XXIII., No. 21, 1898.

Every dentist, every practicing physician who is extracting teeth, knows that after extractions made necessary on account of irritation of the recently inflamed pulp, no "after-pain" is experienced; he knows that extractions after chronic periostitis are often accompanied by slight pains, which soon disappear. He knows that, in the presence of a severe abscess, the cause of the pains, of the swelling, is removed with the extraction of the diseased tooth, but that excruciating pains often continue for hours.

The patient is advised to rinse with warm water, but presently returns and demands a radical cure for the pains that still torture him, in spite of the extraction. We syringe the alveolus with hot water, with a warm carbolic acid solution; the pain abates somewhat, but continues to torment considerably for hours after. And yet we possess an excellent remedy which will almost instantly stop the pain after the extraction of such diseased teeth.

The text-books at hand entirely ignore pain after extraction. The text-book of Prof. Dr. von Mettnitz, Vienna, 1891, mentions only extensive hemorrhages after extractions, and the monographies of Prof. Dr. F. Busch, and Prof. Dr. Hollander, "Die Extraction der Zahne" (Extraction of Teeth), consider only the technic and indicate position. Only the "Handbuch der Zahnheilkunde," edited by Prof. Geo. Scheff, Vienna (Holder, 1892), Vol. 2, part 2, page 243, gives us explanations which Paul de Terra, Zurich, quotes in his book, "Repetitorium der Zahnkeilkunde," the question, "What is the so-called Zahnluckenschmerz" (pain of gaps between teeth), thus: "The pain after extraction, or more correctly neuritis of the alveolus, will generally be found in an inflammation of the continuation of the alveolus, especially in periosteal

affections. The rending of the periosteal nerves, the pulling and expansion of the osseous walls, an insignificant, scarcely apparent fracture, may contribute to the 'Zahnluckenschmerz' that may torture the patient for days. Often also, the cause is to be found in the gum protruding over the sharp alveolar ridge, that becomes liable to inflammation from the constant friction. Therapy can do little here, and treatment of this affection is rather palliative. The pains cease after a short time. Rinsings with ice water, incisions in the gum, subcutaneous morphine injections, antipyrin taken internally, etc., may be employed for the worst pain."

The English and American dental journals make frequent mention of the pains after extractions and many suggestions were made and remedies given for removing them.

Ellis Canning, in the *Dental Cosmos*, 1892, recommends rinsing of the alveolus with a hot carbolic acid solution, 15:100, and according to the *Western Dental Journal*, 1894, amyl nitrite and nitro-glycerine ought to be in every operating room, the first for inhaling, the latter to be given internally, a drop of a one per cent. solution in a glass of water. Dr. Genese, in ITEMS OF INTEREST, 1893, recommends the use of a preparation of one part chloroform with three parts pyrethrum tincture. Dr. Chupein, in *Dental Office and Laboratory*, recommends cotton pellets dipped into aconite and chloroform into the socket.

Concentrated Carbolic Acid After Extraction. For about five years, I have after every extraction with subsequent pains, wiped the alveolus with concentrated carbolic acid. For this purpose I wrap around the dental tweezers, after curving them at the point, a little Bruns (?) cotton; dip it into carbolic acid carb. and thoroughly wipe every part of the socket. Success is almost always certain, even after hours of pain; the latter ceases suddenly, and this experience I have often had with patients that came to me from the surrounding territory of Teplitz. Care must of course be taken not to touch any part of the face, and have the patient rinse immediately after the application. If the exterior part of the mouth has been touched accidentally, it should be washed with water immediately and afterwards painted with alcohol.

After the application in above described manner, of undiluted carbolic acid for pain after extraction, no evil effects will appear as I have myself observed in thousands of cases. Dr. Oscar Allis, of Philadelphia, in *The Polyclinic*, 1897, based upon repeated operations, also claims that even an excess of undiluted carbolic acid in abscess cavities, exposed tissues, burns, etc., is less dangerous than a diluted solution.

At the Naturalists Congress, at Vienna, in 1894, I have personally communicated this method of using concentrated carbolic acid, and later

on repeatedly spoken of it at dental meetings, but have not heard anything with the exception that Surgeon Dr. von Reuss, Billin, has completely confirmed my observations.

The action of carbolic acid as an analgesic is well known, since it is contained in all pastes for devitalizing the pulp. The Rossler mouth wash, so popular in Austria, is an alcoholic solution of carbolic acid, and those grumbling aches at the necks of exposed roots, disappear after the use of a mouth wash containing carbolic acid.

If my method of treating the pain after extraction is practiced by many a dentist and physician, I shall be pleased to receive reports of their experiences.

Eucaine in Dentistry.*

By A. SALOGA.

[*From Professor Bobrow's Surgical Clinic, Moscow.*].

In the dental department of the above clinic—from October, 1896, to October, 1897—we performed 745 dental operations under the following conditions:

Without anaesthetics	205
Under cocaine anaesthesia	220
(One Pravaz' syringeful of 2 per cent sol.)	
Under eucaine anaesthesia	320
(One Pravaz' syringeful of 5 per cent sol.)	

In extractions without anaesthetics, nervous disturbances in the form of slight giddiness (one of actual fainting) were observed in fifteen persons, which equals 7.3 per cent of the cases under observation. In extractions under cocaine we observed by-effects ranging in severity from slight giddiness to marked cocaine poisoning in 103 of the cases, equal to 46.8 per cent. In extractions under eucaine, however, out of 320 patients treated, only eight or 2.5 per cent seemed slightly dazed. In reviewing these figures an enormous difference is to be observed in the number and severity of the affections of the nervous system caused respectively by cocaine and eucaine. When we consider that in extractions without any anaesthetic, slight by-effects were observed in 7.3 per cent of the cases treated—these by-effects being attributed to acute irritation of the sensory nerves and to physical excitement and fear of the operation—we cannot help concluding that with eucaine anaesthesia not only are these by-effects not increased, but are even reduced in number by two-thirds.

* *Chirurgia*, No. 14, 1898, Moscow.

General by-effects after eucaine anæsthesia were only noticed in 2.5 per cent of the cases; and these may doubtless be regarded as ordinary consequences of the purely physically excited condition of the patient during the operation, seeing that, in the few cases in which nervous disturbances were observed they appeared during the injection of the anæsthetic, or so quickly after the same (half a minute) that the assumption that eucaine had already been assimilated, and caused poisonous symptoms, is quite out of the question. Even in those cases where nervous disturbances did take place, they were confined to a slight dazed condition, which rapidly disappeared in the short space of three to five minutes.

The poisonous symptoms which some authors who have made pharmacological and physiological experiments with eucaine have reported, have not in the slightest degree been experienced by us. The comfort and confidence which the physician feels owing to the non-toxicity of eucaine can only be appreciated by those who have experienced but one case of cocaine poisoning, such as may happen even when weak solutions are used.

As an illustration the following case may be given: On the 5th of February, 1897, a lady came to

**Cocaine
Toxæmia.**

us to have a tooth extracted, but requested an absolutely painless operation. We found on examination extended caries of the lower left premolar, with a chronic inflammatory condition at the root of the tooth. As there was no reason for not using cocaine, we injected 15 minims of a 2 per cent. solution into the gums, after which we removed the tooth painlessly. First of all the patient was all right; five minutes afterward, however, she complained of giddiness, followed by alarming syncope; the face was covered with clammy perspiration, pulse was accelerated, pupils were dilated, breathing became slower and superficial, at times completely stopping, and an inclination to vomit was experienced. In spite of all our efforts the condition lasted for a quarter of an hour, during which period we had several times to resort to artificial respiration, after which the patient began slowly to recover, but had frequent relapses, becoming stupefied, respiration affected, etc., and we had again to resort to artificial respiration.

At last, after an hour had elapsed, the patient came round completely, began to notice her surroundings, and to answer questions, respiration became more regular, but the general weakness remained. After a further hour, the patient had so far recovered that we could let her go home without fear. A few days later we heard that in the evening, ten hours after the cocaine injection, the patient had another serious relapse, necessitating calling in medical aid. From what we heard, the symptoms

were the same as those observed in our clinic, and it took the medical attendant two to three hours before he was able to get the patient all right again. Of course, we had here to do with an extraordinary case, but we cannot say that some of the other cases which we observed in our clinic were of much less severity. The cases under our notice varied considerably in severity, ranging from a slight giddiness and discomfort in the region of the heart, to symptoms of the severity above described.

We might here mention that opinions differ as

Dosage and Effects of Eucaine. to the dosage of eucaine, some considering 1-5 grain as the maximum, whilst others give as much as 1½ grains. As above mentioned we always use a dose of ¾ grain, which we reduce to ½ grain if the age be from twelve to sixteen years; in some cases, however, we have increased the dose to 1 grain without observing the slightest ill-effects.

We injected the eucaine solution by means of a deep puncture in the gums on each side of the tooth to be extracted.

A disadvantage complained of with eucaine is the swelling observed at the point of injection, which, however, is very small and painless, and we therefore do not attribute any importance to it; this swelling, however, does not appear with every patient, which led us to believe that it was caused by an insufficient sterilization of the syringe. This assumption moreover, seemed confirmed by the fact that although we only prepared small quantities of the solution, which were sterilized by boiling before use, still we had to introduce the syringe, which had been used several times, into the solution.

In order to determine this point, bacteriological experiments were carried out with solutions of different ages. As culture grounds we used glycerine agar, gelatine, and beef tea; but we did not succeed in a single case in getting growths. In order to determine whether the syringe or the needle made the solutions impure—we may here mention that the needle before being used was always boiled and a 5 per cent carbolic solution passed through it—we dropped solutions of eucaine upon the above-mentioned culture grounds through the needle in the same manner as if we were injecting it into the gum, but failed to get any positive results.

On the basis of these observations we must come to the conclusion that the swelling caused by eucaine in the gum is the result of a specific influence upon the tissue, and that it does not act with the same virulence upon all persons.

CORRESPONDENCE

Dr. Kingsley Not to Leave America.

To the Editor of ITEMS OF INTEREST.

Dear Sir:—In the October number of the "Dental Practitioner and Advertiser," edited by Dr. Barrett, of Buffalo, appears the extraordinary statement that "Dr. Norman W. Kingsley, formerly of New York, has located in Dresden, Germany, as the assistant of Dr. Jenkins. He has charge of the laboratory and prosthetic work."

The only possible basis for such a ridiculous statement is, that, when upon a friendly visit at my country house a few years ago, Dr. Kingsley, during the illness of one of my partners, although at that time far from well himself, kindly came into town and gave me, in some special cases, the inestimable advantage of his great skill and wide experience.

As the publication of the "Dental Practitioner and Advertiser" has been suspended with the October number, I shall be most grateful if you will kindly publish this statement in your esteemed journal, to correct a rumor, which is as unjust to my distinguished friend, as it is grotesquely flattering to me. I am, Sir, yours very faithfully,

(Signed)

N. S. JENKINS.

Dresden, Germany, Nov. 30, 1898.

Open Letter to Dr. Patterson.

Editor Western Dental Journal,

MY DEAR DOCTOR PATTERSON:—Please permit me through the ITEMS OF INTEREST to take decided exception to your remarks in your November editorial concerning the censure of the New Jersey State Dental Society by the National Association, and to discuss the whole matter of the report on prophylaxis, made by a committee of said society.

You say "The New Jersey Society was represented at the National Meeting by Dr. S. C. G. Watkins, the chairman of the Committee on Prophylaxis, whose report and its adoption constituted the offense for which the New Jersey Society was censured."

Now, Doctor, this is a misstatement of facts, for I in no way what-

ever represented the New Jersey Society at the National Meeting, but attended the meeting entirely in my individual capacity.

I most positively disclaim all representative functions in my attendance at the Omaha Meeting, and I most emphatically protest against the National Association using my personal explanation as a basis for condemning the New Jersey State Dental Society.

The mere fact of my personally appearing before the Credential Committee, and the Association itself, and explaining to them the facts of my investigation into the subject of dentifrices, and my report upon same, could in no way disturb the rights of the New Jersey Society, nor deprive it of its constitutional prerogative to be officially notified of the contemplated action of the National Association, nor of its right to defend its actions by a duly appointed representative.

Dr. Ottolengui's statement, therefore, holds perfectly good. The National Association without any due notice whatever to the State Society, and without the slightest chance for that Society to be duly and properly represented, condemned the Society, unheard and without opportunity for defense.

Its censure was, consequently, a most grievous wrong, and a gross breach of all professional ethics.

That the resolution was passed without "proper consideration," as claimed by Dr. Ottolengui, is self-evident, when we contemplate the remarkable fact that the National Association was not cognizant of a single word of the report when it passed its vote of censure. How, then, may I ask, could the National Association "properly consider" that of which it legally knew nothing, or condemn a report which it had never seen or heard? This alone condemns the action of the Association as hasty and inconsiderate.

The New Jersey State Dental Society has a "Code of Ethics," by which the professional conduct of its members is governed and regulated. This code requires them to "*enlighten* as well as to *warn* the public."

It was entirely within their province to enter into a scientific investigation of dentifrices, prophylaxis or any other subject, at will, and after conclusively demonstrating that there is a preparation that possesses all the requirements of an ideal prophylactic, it was not only their right, but it was their duty to publish the fact.

The ethics of the profession is founded upon the fundamental principle of "the greatest good to the greatest number," and the welfare of the patient is its highest law. If it is the duty of the profession to warn the public against the empirical and the harmful, it surely is its duty to enlighten it, concerning articles of great merit and of unquestionable value. This duty is even more obligatory on a State Society than upon the pro-

fession at large, from the fact that its incorporation by the State imposes a reciprocal duty between the society and the people (or State), or, as the code of ethics of the New Jersey State Society expresses it, implies "Mutual duties of the Profession and the Public" (Article 4).

So, since the New Jersey State Dental Society has not in this matter violated either its own Code of Ethics, nor that of the National Association, but has performed its highest duty not only to the profession, but to the public at large, I maintain that the action of the National Association was not "eminently a proper one," as you claim, but was illegal, entirely uncalled for, and the most unjustifiable exhibition of the empirical spirit and method, that has ever taken place in a scientific body of professional men.

Replying to your kindly advice to the committee and to the society to "own up and let the matter drop out of sight as quickly as possible," I would say that a matter is not properly settled until it is settled rightly, and I most firmly maintain that the only right way of settling this affair is for the National Association to do the "owning up" and acknowledge that its censure was without previous notice to the accused and without opportunity for proper defense. That it was based upon improper evidence, and was therefore illegal, inconsiderate, unjust and a grievous wrong to the State Society.

As for myself, I would say, I have nothing to "own up" to, to crawl out of, or to be ashamed of, and see no reason why I should take your possibly disinterested (?) advice. My connection with the matter is simply this: At the suggestion of a visiting dentist, the New Jersey State Dental Society, upon vote at its annual meeting of 1897, decided to appoint a Special Committee to investigate the subject of dentifrices and other prophylactic agents. The President accordingly appointed a committee of five, of which I was made Chairman, with instruction to investigate the subject and report the results of such investigation at the next annual meeting of the Society.

In accordance with the instructions of the Society, I entered into a careful investigation of the subject, and after a most conscientious and unbiased examination of the leading antiseptics and dentifrices on the market, and an especially close observation of the action of all such, in cases of inflamed and spongy gums, pyorrhœa alveolaris, and excessive accumulations of salivary calculus, I carefully prepared the report, which I took to the annual meeting of the Society, held at Asbury Park last summer, and called a meeting of the Committee, which was attended by all the members composing it, except Dr. Luckey. I told them of my investigations and the results of same, and read the report which I had prepared. I understood from all the members present that their in-

dividual investigation into the matter of dentifrices bore out all my conclusions, and they unanimously endorsed same, and even passed a formal vote of thanks to me for writing the report.

The next day I hunted up Dr. Luckey and told him the results of the meeting held by the other members of the committee, and read the report to him which he heard and to which he did not in any way object, but after adding a single word to it, "Zymocide," signed the report and thus made it the unanimous action of the committee.

The report was then read to the society, and after a slight discussion and without a single word of fault, or suggestion of change, it was, on motion, referred to a committee by the Society for further consideration.

I thus did my duty, my whole duty and nothing but my duty, and I again say I have nothing to "own up" or to be ashamed of, but since this matter has assumed such a character as to involve my professional reputation as a careful and conscientious investigator into scientific facts, I assure you I do not propose "to let the matter drop out of sight" until it is settled properly and justice accorded those wronged.

The only right way, in my opinion, to settle it is for the National Association to acknowledge its error, and to take up the matter as suggested by Dr. Ottolengui, and appoint from its ranks a committee of men, competent from their knowledge of chemistry, bacteriology, therapeutics and *materia medica* to scientifically investigate the subject of dentifrices, and determine in a true scientific spirit the facts of the case.

The statements presented by the Special Committee on Prophylaxis to the New Jersey State Dental Society are indisputable facts, and any honest and thorough investigation will, I believe, justify all the findings presented in that report.

Now, Doctor, you have expressed merely an "opinion," but the "facts" are all against you. The New Jersey Society in appointing its Committee of Investigation was entirely within its prerogatives and inherent rights as a society. In making the investigation and authorizing the report as it did, it in no way violated its own Code of Ethics nor that of the National Association, and was not therefore subject to the censure of the National Association. The limits of the right to censure, by the National Association, deserves most careful consideration, and should be more clearly defined. Even if it was (which I doubt) entirely within its jurisdiction to censure the State Society for reporting favorably upon a dentifrice (which was not, by the way, a secret preparation, as you state, but one whose formula is published), you certainly must admit that the State Society in no way forfeited its rights to all the privileges of the accused, i. e., a proper legal notice of the offense charged against it; an opportunity of making a defense by duly authorized and specially ap-

pointed persons, and a fair trial upon competent evidence; certainly none of which was granted it; therefore Dr. Ottolengui is entirely correct in claiming that the author led the National Association into "a grievous error," and I am fully persuaded you are wrong in claiming the action of the Association as being "eminently a proper one," and that the New Jersey Society merited the censure it received.

I feel sure you must acknowledge the truth of all I have said, and will do your part in correcting the grievous wrong you unwittingly have done to the New Jersey Society, and your humble servant and fellow practitioner. I am, yours very truly,

S. C. G. WATKINS.

Montclair, N. J., Dec. 2, 1898.

Electric Deposition of Metals.

Editor Items of Interest:

In the October issue of the ITEMS OF INTEREST there appeared an article under the caption "Electro-Deposit Bridge." It was my desire to reply to it in the subsequent issue of your journal, but business forbade until now.

As soon as I glanced at the heading I became much interested and perused the article with eagerness, hoping to be enlightened upon a subject of which I have long been fond, and in which line I have experimented extensively in the last few years, *i. e.*, electro-deposition of metals as applied to dentistry.

I hardly know how to express an opinion of the article referred to, and, for quite a while, I was at a loss to know what could induce a person to make such statements as were contained therein.

I was both amazed and amused, by reason of having repeatedly failed in efforts to produce certain results (and under most favorable conditions) which the author claims to have succeeded in accomplishing, and apparently without effort. He may be, and doubtless is sincere in his *belief* that he can do what he claims, but I venture the assertion that a practical test will convince him to the contrary. He has evidently experimented slightly in galvano-plastic operations with a saturated solution of copper sulphate, but with the noble metals—*never*.

It is true, the electro-deposition of metals is a beautiful, and, in many lines, a successful art, but, as applied to dentistry, it has, up to the present time been successful only to a limited extent.

If the author of the article under consideration will familiarize him-

self with the fundamental principles of the science, he will then appreciate the almost insurmountable difficulties to be overcome in its application to dental prosthetics.

A knowledge of this work is acquired only after diligent study, and extensive as well as expensive experiments, and to reach desired results, one must familiarize himself sufficiently with the subject, to give due regard to those little details which are so essential in making the simplest operation a success.

To deposit one metal upon another, either by immersion or by contact, is, in itself, a simple operation, but to deposit gold or kindred metals by this process, and sufficiently heavy to withstand the blow-pipe flame, would require an expenditure of time and labor far in excess of that now employed in constructing crowns, bridges, etc.

I trust this communication will bring from my brother practitioner a reply, in substantiation of his claims, which, be they genuine (and I trust they are), he can prove through the columns of this journal, by giving a detailed description of his process.

Now, in conclusion, let me say that I am far from desiring to impute improper motives to the gentleman in writing as he did, but I must say, I believe that he in his enthusiasm, claimed to accomplish things which, in the future he will find it impossible to do.

I have written this because we, as a profession, read dental literature to enable us to perfect ourselves in certain lines in which we feel ourselves deficient, and also to form an acquaintance with those methods of procedure with which we are not familiar, and to adopt those of them that have been tried sufficiently to prove their utility.

As a rule, articles in reputable dental journals are not mere figments of the mind; *ignis fatuus* born of vivid imaginations and never having existed *in esse*, but are substantial truths; the results of mental and physical labor; of honest efforts for the advancement of the profession; and which can be proven and relied upon as facts existing as the results of actual experiment and practical tests, and not based solely upon unproven hypotheses, which latter do not tend toward the advancement of any individual or class, but, by their fallacy, impede an otherwise healthy progress in lines of scientific research. Yours truly,

DAVID AIKEN, D. D. S.

Winnsboro, S. C., Dec. 14, 1898.



International Dental Congress of 1900.

In consequence of a convocation addressed to the Odontotechnic School by the provisional committee constituted by the Dental School of Paris, a meeting was held on the 26th of June last in the rooms of the latter school.

There were present at this meeting thirty-four members as follows: Seventeen members representing the Dental School of Paris (five members taken from the Council of Directors of the School Society and the Dental Dispensaries of Paris; four members elected from the Bureau of the Odontological Society of Paris; eight members from the provinces delegated by the Board of Directors of the General Association of Dentists of France). Seventeen members representing the Odontotechnic School (five members taken from the Board of Directors of the Odontotechnic School; four members elected from the Bureau of the Odontotechnic Society of France; eight members from the provinces delegated by the Board of Directors of the Odontotechnic Association of France).

After a discussion of the objects of the meeting, and a review of the work of the Committee of Initiative made by M. Godon, the assembly agreed upon the nomination of a provisional committee of organization, whose duties were thus defined:

1. To prepare a set of rules.
2. To make an appeal to the French Societies asking them to name one member delegated by twenty active members, or fraction of twenty members.
3. To correspond with the professional societies of foreign countries and cause the formation of committees of organization in their respective countries.

Secretary General's Office.

Paris, Nov. 15, 1898.